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Το Αγροτικό σε Ανάπτυξη

Doxiadis Associates' Spatial Visions for Postcolonial Africa
The Rural in Development

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Acronyms and Terms

ACE	Athens Centre of Ekistics
AMAG	American Mission for Aid to Greece
ATO	Athens Technological Organization
CIAM	Congrès Internationaux d'Architecture Moderne
COF	City of the Future
CPT	Central Place Theory
DA	Doxiadis Associates
ECA	Economic Cooperation Administration
ECLA	Economic Commission for Latin America
ELS	Ekistics Logarithmic Scale
EPR	European Recovery Program
FAO	Food and Agriculture Organisation
FNDP	First National Development Plan (Zambia)
GSE	Graduate School of Ekistics
GNP	Gross National Product
HHFA	Housing and Home Finance Agency
HTCP	Housing and Town and Country Planning (United Nations)
IBRD	International Bank of Reconstruction and Development
IBPR	Interallied Bureau of Postwar Requirements
IMF	International Monetary Foundation
ML	British Military Liaison
NATO	North Atlantic Treaty Organization
NTUA	National Technical University of Athens
NSDAP	National Socialist German Workers Party
OEEC	Organization for European Economic Cooperation
OSR	Office of Special Representative
RIBA	Royal Institute of British Architects
TVA	Tennessee Valley Authority
UN	United Nations
UNCIO	United Nations Conference on International Organization
UNECA	United Nations Economic Commission in Africa
UNRRA	United Nations Relief and Rehabilitation Administration
WSE	World Society for Ekistics
ΑΣΑ	Ανώτατο Συμβούλιο Ανασυγκροτήσεως Higher Reconstruction Council
ΓΧΠΜΕ	Γραφείο Χωροταξικών Πολεοδομικών Μελετών και Ερευνών Office of Town Planning Studies and Research
ΕΑΜ	Εθνικό Απελευθερωτικό Μέτωπο National Liberation Front
ΕΔΕΣ	Εθνικός Δημοκρατικός Ελληνικός Σύνδεσμος National Republican Greek League
ΕΛΑΣ	Ελληνικός Λαικός Απελευθερωτικός Στρατός Greek People's Liberation Army
ΚΚΕ	Κομμουνιστικό Κόμμα Ελλάδας Greek Communist Party
ΥΣΕΣΑ	Υπηρεσίας Συντονισμού της Εφαρμογής του Σχεδίου Ανασυγκροτήσεως
GRPCO	Greek Recovery Program Coordinating Office

Υφυπουργείο Ανοικοδόμησης - Undersecretary's Office for Reconstruction
Γενικός Διευθυντής Υπουργείου Ανοικοδόμησης - General Director at the Ministry for Reconstruction

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I dedicate this thesis to my family.

Introduction

Research framework

This thesis is situated within the historical framework of the so-called "development age",[1] a period initiated after the Second World War, when developmental discourses had profound and world-wide effects, defining the agendas of international organisations and nation-states, shaping social identities and the physical landscape. The power and pervasiveness of development discourses rested on how they framed the world into 'developed' and 'underdeveloped' countries (presumably showing the latter which way to proceed) thereby identifying development as a linear process that would lead towards self-determination, progress, economic growth, and modernity. The ideological basis and the inherently political nature of development agendas were disguised in technocratic discourses embraced by bureaucrats, and by foreign and local experts. Developmental goals were translated into technical assistance programs, policy making, and planning, firmly establishing development in the post-war era "[as] a new mode of global governmentality"[2] with a deeper impact on the non-western and non-industrialized countries: the so-called 'Third World'.

This study aims to investigate the complexities of development agendas and their spatial impact; firstly, by selectively focusing on the work of Doxiadis Associates and secondly, by focusing on postcolonial Africa. As one of the paradigmatic cases of architects operating as "development experts"[3] Constantinos Doxiadis' career path was framed, shaped and influenced by post-war developmentalism, while Doxiadis Associates vigorously promoted development planning from its inception in 1953 until its establishment as one of the largest transnational planning firms in the 1960s and early 1970s. By focusing on key projects of Doxiadis Associates in, and beyond Africa, this study aims not only to explore how development discourses shaped the built environment, the countryside and the landscape, but also to trace the multiple ways in which architecture and planning actively advanced

1 See W. Sachs, ed., *The Development Dictionary: A Guide to Knowledge as Power* (London, Zed Books, 1992).
2 A. Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham, N.C., Duke University Press, 1998), p.9.
3 See also P. Pyla, "Architects as Development Experts. Model Communities in Iraq and Syria", in P. Pyla, ed., *Landscapes of Development: The Impact of Modernisation Discourses on the Physical Environment of the Eastern Mediterranean* (Cambridge, Harvard University Aga Khan Program, 2013), pp. 166-189.

development agendas. In analysing Doxiadis Associates' multi-scale practice in the context of broader transnational networks and flows of capital, ideas, and expertise, the study investigates how issues of human settlement, spatial organisation and infrastructure became key in the economic and socio-political agendas of international actors and nation-states. In doing so, the study traces the multiple responses to these agendas, and examines architecture in conjunction with other epistemologies, cultural and social claims, and visions, all of which contributed to shaping the contested field of development.

This research framework is captured in the thesis title, which outlines the main objects of study. The definitions of key concepts that appear in the title are not to be understood as fixed or immutable. Their use in this thesis largely depends on broader methodological choices, the particularities of the topic and the author's selective use of theoretical references. Before presenting this thesis' main research questions, I offer below an analysis of the main concepts and their interrelations.

Doxiadis Associates' spatial visions

The term *spatial visions*, encompasses abstract and complex understandings of *architecture/planning* and of *space,* as used by Constantinos Doxiadis (and subsequently, Doxiadis Associates). As will be shown in the first chapter, Doxiadis' attempt at formulating a planning framework in the mid-1940s, the so-called *Ekistics*, conceived of planning as a multi-scale practice broadly associated with a process of organisation, or arrangement of, space. On this basis, Doxiadis developed a notion of spatial planning[4] that considered the multiple dimensions of space — physical, social, economic, political, cultural, environmental — and their interconnections. This framing of space, which relied on 'organic' metaphors in post-war modernist planning, informed Doxiadis' concept of human settlements as complex spatial

4 Over the last few decades, the term "spatial planning" has tended to establish itself in planning debates (at least in a European context as well as in Greece), as encompassing the different scales and levels of planning, while incorporating the notion of "space" as a complex term that takes into consideration a multiplicity of dimensions (physical, social, economic, political, cultural, environmental) and their interconnections. It is also a term that has been used on a European context to overcome the different terminologies used in different planning traditions and cultures (e.g. Stadtebau, town planning, urbanisme, aménagement du territoire etc.). See P. Newman and A. Thornley, *Urban Planning in Europe: International Competition, National Systems and Planning Projects* (London, Routledge, 1996); and European Commission, *The European Union Compendium of Spatial Planning Systems and Policies*, Luxemburg: Office for Official Publications of the European Communities, 1997.

establishments interconnected with their physical surroundings but also with each other. Envisaging these interconnections as a form of network, Doxiadis also considered infrastructure, rather than just buildings or public urban spaces, as crucial to a conception of space as having broader socio-economic implications. Furthermore, he questioned narrow categorizations of settlements as either urban *or* rural as well as the city vs. countryside divide. Instead he adopted a classification of settlements based on hierarchical scales defined by socio-spatial dimensions, such as population (demographics) and their territorial dimensions, echoing the influence of the German geographer Walter Christaller on his own thinking, as discussed in Chapter 1. This quantitative and technocratic approach also expressed Doxiadis' aspiration to formulate Ekistics as a multi-scale, cross-cultural planning framework that would become the foundation for Doxiadis Associates' transnational practice thereafter, and the basis of Doxiadis' emblematic vision of Ecumenopolis, a future/planetary-scale continuous settlement.

Drawing on this groundwork, Doxiadis and Doxiadis Associates elaborated what I call here, spatial visions—which crossed multiple geographical scales—to conceptualise and communicate ideas not strictly for the purpose of architectural or planning studies and projects, but also, to engage different audiences, such as scientists, bureaucrats and politicians, and the wider public sphere. In this sense, spatial visions were not necessarily expressed through representations, such as diagrams, plans, or maps, even though Doxiadis relied greatly on such visualisations. They could also be embedded in ideas, thoughts, conceptions, texts, and discourses. Spatial visions could rest, implicitly or explicitly, within social, cultural, economic and political visions, expressing perceptions about the past but also aspirations for the future, while also promoting social, economic and cultural transformations. They could refer to material or imagined places, territorial formations, the landscape, the local, and the planetary, and different ranges of geographic scales. Rather than being static, these *spatial visions* can be understood as dynamic abstractions, enabling Doxiadis Associates to adjust to different contexts. By mobilising and capturing the imagination, these visions were instrumental in promoting various forms of individual or collaborative exploration and inquiry, translating 'collective' aspirations and challenging traditional planning approaches. They served both as symbolic/rhetorical statements and as the medium for shaping alliances: political, intellectual, academic, professional, or other.

In this light, the spatial visions to which I am referring here share some of the qualities of the more extensively theorised notion of "imaginative geographies."[5] Similarly to spatial visions, imaginative geographies may by abstract, but they are not unreal. They may circulate in texts, discourses, or maps but they have real, concrete effects in shaping, normalizing and legitimizing perceptions which are then acted upon, thus impacting the real world. As they are involved in revealing or concealing, in "bordering as well as ordering"[6] such spatial/geographical visions imply power implications. They can become tools for political control and manipulation, but they can also mediate imagining "the creation of alternative social orders."[7] Therefore, we use the term spatial *visions* aiming to create the critical distance necessary to challenge attempts at presenting any kind of spatial conception as natural or neutral; apolitical or ahistorical; and to analyse their assumptions and agendas by situating them within specific historical, sociopolitical and technological contexts. This critical understanding of *spatial visions* extends beyond the focus on Doxiadis Associates and seeks to address the multiple spatial/geographical imaginaries inherent in developmental and postcolonial visions.

On development

This thesis understands development as a complex and contested term, entailing multiple aspects–often contradictory– which may refer to a set of policies, a set of discourses, or a set of theoretical elaborations.[8] For the purposes of this thesis, development is understood as:

5 Imaginative geographies were introduced originally by E. Said in his seminal work of Orientalism and subsequently theorized in the work of geographer Derek Gregory. See E.W. Said, *Orientalism*, (London, Penguin, 2003 [1978]); D. Gregory, 'Imaginative Geographies', *Progress in Human Geography*, 19 (1995), pp. 477–85, F. Driver, 'Imaginative Geographies', In P. Cloke, P. Crang and M. Goodwin, eds, *Introducing Human Geographies*. (London, Hodder Arnold, 2005).

6 See D. Gregory et.al, ed., *The dictionary of Human Geography*, 5th ed., (Malden MA, Wiley-Blackwell, 2009), p. 282

7 D. Harvey, "The sociological and geographical imaginations", *International Journal of Politics, Culture, and Society,* 18, 3-4 (2005), p. 250.

8 There are several attempts to shed light on the complexities of both the definition and the histories of "development" See G. Rist, *The history of development: From western origins to global faith* (London, Zed Books Ltd., 2014); F. Cooper and R. Packard, eds, *International Development and the Social Sciences: Essays on the History and Politics of Knowledge* (Berkeley, CA: University of California Press, 1997); M.P. Cowen and R.W. Shenton, *Doctrines of Development* (London, Routledge, 1996).

> A central keyword of twentieth-century political economy and social policy, which can broadly refer to processes of social change or to class and State projects to transform national economies, particularly in formerly colonized or Third World geographies.[9]

Development is historically situated in the period following the Second World War and is linked to the founding of international organisations, namely the International Monetary Foundation (IMF) and the International Bank of Reconstruction and Development (IBRD), at the 1944 conference at Bretton Woods. Here, it was agreed to establish systems and institutions of economic control both at the international and national level, aimed at preventing capitalist crises from arising because of unregulated free-market operations. While aiming to reconstruct post-war economies, the interventionism that emerged out of Bretton Woods drew on the experiences of the financial crisis of 1929, of mass unemployment and economic depression, but also on the policies of European colonial states after the First World War.[10] A critical link to this broader inter-war context was the work of the British economist John Maynard Keynes,[11] who offered theoretical foundations for state intervention and macroeconomic control over the economy. Similarly, the founding of the United Nations (UN) in 1945 continued, in many ways, the "logic of interstate cooperation and stability in a world of empires and great powers" that had been established by the League of Nations in the 1920s.[12] UN rhetoric on world peace and international cooperation supported and further legitimised the idea of using international economic aid to stimulate economic growth, an approach which justified the reconstruction of European economies under the US-led Marshall Plan.

The perceived success of the economic recovery of Europe, signalled the beginning of the so-called "development age" when, in 1949, US President Harry Truman introduced the Four

9 D. Gregory et.al, ed., *The Dictionary of Human Geography*, 5th ed., (Malden MA, Wiley-Blackwell, 2009), p.155.

10 See T. Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (Brooklyn, Verso Books, 2011), p. 134.

11 Keynes published in 1936 a book titled *The General Theory of Employment,* where he argued that employment levels in economy are dependent not on the level of supply but on the level of demand offering an economic foundation for government interventions for the reduction of unemployment levels during recessions.

12 For the origins of the United Nations and the links to the League of Nations see M. Mazower, *No Enchanted Palace: The End of Empire and the Ideological Origins of the United Nations* (Vol. 1) (Princeton, Princeton University Press, 2009).

Point Plan, which announced his country's support to the world's 'underdeveloped' countries, introducing this term for the first time.[13] US developmental aid was shaped by Cold War antagonisms and wider geopolitical interests. It utilised technical assistance and the transfer of "Western" ideals and knowledge as a means of shaping political and economic conditions so as to prevent the spread of "communist ideas" and Soviet influence in the newly decolonised countries. The international aid of Bretton Woods organisations and UN agencies would target different sectors: agricultural production, water and energy infrastructure, housing, education, and industry, aiming to promote economic growth through the use of macroeconomic tools and national economic planning. Eventually, the spread of development as an international agenda to eliminate poverty and "underdevelopment" was tied to the emergence of the nation-state and the idea of a world organised into sovereign political and economic entities.

In this context, development emerged not only as a set of economic policies, but also as a deeply spatial and techno-political project. Firstly, being influenced by 1950s modernisation theories, development was conceived as a linear and evolutionary process which required social and cultural modifications to propel non-western, 'traditional' societies towards a more modern, rational, entrepreneurial stage.[14] This transformation was seen as taking place through space (rather than time), on the assumption that social values, ideas and technology would spread from 'modern' to 'traditional' sectors and from developed poles/nodes to their surroundings. Secondly, a crucial legacy of development-as-modernisation was the Tennessee Valley Authority (TVA) project in the 1930s-USA, which involved transforming a river basin to improve the economy of a poor region.[15] The TVA helped tie development to regional planning and large-scale infrastructure projects. It combined the extensive application of science and technology in the management of natural resources with the mobilisation of local communities under the guidance of government agencies' planners and

13 Truman's other "Points" were: his country's support for the United Nations; the continuity of the European Reconstruction Program and the establishment of the North Atlantic Treaty Organisation (NATO). Unlike programs for Europe, US assistance to the "underdeveloped areas" would come in the form, not of capital, but of ideas. See W. Sachs, ed., *The Development Dictionary: A Guide to Knowledge as Power* (London, Zed Books, 1992), xvi.

14 S. Chant and C. McIlwaine, *Geographies of development in the 21st century: an introduction to the global South* (UK, Edward Elgar Publishing, 2009), p. 27.

15 The TVA was part of the US New Deal program in the 1930s. N. Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore, John Hopkins University Press, 2003), p.39.

private-sector engineering firms.[16] It was thus promoted by US policy makers to 'underdeveloped' countries as a counter-model to top-down Soviet planning,[17] and it was adopted as part of the UN's agenda to combine development goals with the 'taming' and exploitation of natural resources.[18] The TVA and other similar projects, based on the expertise of engineering, technology, and science, gave development an apolitical, technocratic mystique which presented complex social and environmental problems as issues of "proper management."[19] In this respect, Mitchell's term "techno-politics" is useful to this study in highlighting the complex assemblages of power and knowledge behind development projects which, nevertheless, are best seen as "complex techno-social practices that also have unintentional and unpredictable effects"[20] beyond the expectations of the experts/bureaucrats.

The perspective of "techno-politics" foregrounds the role of expertise, techno-science and power in development planning that was extensively employed by European countries to promote social and economic transformation in their colonies and to re-establish colonial legitimacy among the emerging anti-colonial movements. For instance, The *British Colonial Development and Welfare Act* (1940, 1945) and the French, *Le Fonds d' Investissement pour le Développement Économique et Social* (1946), increased development funding for British and French colonies in various sectors: from welfare policies in healthcare and education, to large-scale hydroelectric infrastructures and commercialisation of agricultural production.[21] These projects established firm legacies in those countries that would soon be labelled 'underdeveloped', 'Third World', countries. Late-colonial episodes in the history of development are crucial for this study, not only to highlight the complex genealogies and

16 R. P. Tucker, 'Containing communism by impounding rivers: American strategic interests and the global spread of high dams in the early Cold War', in McNeill, J. R. and Unger, C. R., eds., *Environmental histories of the Cold War*, (Cambridge, Cambridge University Press, 2010), p. 141.

17 As David Lilienthal argued in 1951, "TVA represents an idea that can be utilized as one of the major influences to turn back the tide of Communism which today threatens to engulf Asia." (Cited in Tucker p.144.

18 P. Pyla and P. Phokaides, 'An Island of Dams: Ethnic Conflict and Supra-national claims in Cyprus', In F. Menga and E. Swyngedouw, eds., *Water, Technology and the Nation-State* (Routledge, Earthscan, 2018), pp. 115-130.

19 T. Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley, The University of California Press, 2002).

20 G. Hecht, ed, *Entangled geographies: empire and technopolitics in the global Cold War* (Cambridge, MIT Press, 2011), p. 3.

21 See H. Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago, University of Chicago Press, 2011).

geographies of developmentalism, but also to shed light on the continuities between colonial and postcolonial development projects. In the postcolonial context, development planning would operate in a complex field where Cold War tensions, postcolonial aspirations and colonial legacies intersected.[22]

The division between the 'developed' and 'underdeveloped' countries gave rise to the notion of the 'Third World', as a geographic imaginary and as an object of development policies that became associated with various negative connotations such as poverty, backwardness, lack of skills, and, most of all, lack of economic growth. The 'First World' signified the USA and its allies, the prosperous, capitalist, industrialized Western nations, and the 'Second World' referred to the centrally planned economies including the Soviet Union, the Eastern Bloc and the rest of the socialist countries.[23] Hence, the 'Third World' made up of poorer, and mainly recently politically independent, former colonies in Africa, Latin America and Asia. While 'Third World', had largely derogatory connotations, it was also seen in terms of political/ideological interests constituting a field of contestation between the USA and the USSR and between 'capitalist' and 'communist' development models. Nonetheless, both models with their universalizing claims to modernity and the future, can also be understood as imperialist, neo-colonial projects seeking to "align" nations that had just been liberated.[24]

Such concerns combined with the emergence of supra-national visions and attempts to form non-aligned geopolitical alliances that went beyond Cold War bipolarity.[25] Some 'Third World' leaders and elites (e.g., India, Egypt, and Ghana, among many others), saw development as tied to social and economic emancipation, merging the anti-colonial movements' aspiration

22 See U. Kothari, 'From Colonial Administration to Development Studies: a Post-Colonial Critique of the History of Development Studies', In, U. Kothari, eds. *A radical history of development studies: Individuals, institutions and ideologies*, (London, Zed books, 2005), pp. 47-66; See for example, J. M. Hodge, *Triumph of the expert: agrarian doctrines of development and the legacies of British colonialism* (Ohio, Ohio University Press, 2007).

23 S. Chant and C. McIlwaine, *Geographies of development in the 21st century: an introduction to the global South* (UK, Edward Elgar Publishing, 2009), p. 8.

24 The term 'Third World' suggested a model for describing the rise of the global political force of the decolonized countries. It has received criticism for homogenising very diverse conditions and the variations between and within the countries associated with the Third World. See *ibid.*

25 The Non-Aligned Movement (NAM) was a transnational body established in 1961 in Belgrade, that aimed to create a large bloc of countries promoting geopolitical neutrality and a non-military approach to prevent the Cold War from spreading military antagonism across the globe.

for self-determination with the quest for alternative development paradigms. The exploration of alternative paths expressed the former colonized societies' right to 'make their own history' and in the process, remedy colonial/racial injustices and persistent social and economic inequality. Consequently, the examples of Cuba, China and India served as a lesson for other Third World countries in their efforts to challenge the dominant industrialisation paradigm and to associate development with broader political and ideological goals.

The rise of alternative discourses of development, as these emerged in parts of the Third World, is important for this study's focus on Africa in the 1960s and 1970s. In that case, development agendas were also influenced by the rise of economic theories informed by a Marxist perspective that criticised modernization theory and situated development in a historical and global context. The "core-periphery" theory, developed by Latin American economists and sociologists,[26] exposed how capitalist expansion brought the so-called periphery under direct or indirect control and enabled resource exploitation by industrialised countries (the 'core'). In this theory, 'core' states were those which had developed industrial, manufacturing and service sectors. 'Peripheral' states were those which relied on an extensive agricultural sector and raw materials exports. In this light, 'underdevelopment' was no longer attributed to certain inherent qualities of the Third World but to persistently unequal development patterns which existed both globally and within national economies. These critiques formed the basis of "dependency theory" which supported economic strategies aiming to rely less on international trade, promoting instead national development on a self-sustaining, nation-based model.[27]

Gradually, these theoretical approaches led to a more nuanced understanding of the uneven impact of development on different geographic scales.[28] However, efforts to shape alternative development paths were fraught with internal contradiction. In many cases, Third

26 Among these were the Argentinian economist Raúl Prebisch and Brazilian sociologist Fernando Henrique Cardoso. See more: D. Simon, ed., *Fifty Key Thinkers on Development* (London, Routledge, 2006), pp. 199-205; 61-67.

27 See more on "dependency theory" in S. Chant and C. McIlwaine, *Geographies of development in the 21st century: an introduction to the global South* (UK, Edward Elgar Publishing, 2009), p. 32.

28 For example, S. Amin, *Accumulation on a World Scale: A Critique of the Theory of Underdevelopment* (New York and London, Monthly Review Press, 1974).

World elites operated "in complicity with the needs of international capital,"[29] thus undermining the future of less-privileged social groups. By the mid-1970s, these contradictions, and the empirical failure of developmental agendas, had led to the realization that development had completely ignored environmental protection, food problems, gender issues, and human settlement.[30] Despite these failures, a new wave of developmental policies, enriched and more pervasive, soon emerged. These policies were prompted by an emerging neoliberal economic agenda that followed the oil crises in the early 1970s; political changes in US/UK, and important changes in the international monetary system, which renounced post-war Keynesian developmental approaches.[31]

Over subsequent decades, in aiming to address the 1980s Third World debt crisis, these policies advocated minimizing state involvement in the economy, deregulation, and extensive structural adjustments, on the assumption that the free market could 'optimise' economic production.[32] Simultaneously, the global 'development' divide shifted from the logic of 'First', 'Second' and 'Third' worlds, to a 'global North' and 'global South,' especially after the 'Second World's' collapse in 1989. This gave way to the expansion of development on a global scale.

In any case, the mid-1970s are here understood as mobilising a decisive turn in development and this also marks the end of this thesis' timeframe. Firstly, this critical moment seems to initiate the radical transformation of the institutional, and the broader political, background of the post-war development project and its revisions, which this thesis traces from the mid-1940s onwards. Secondly, Constantinos Doxiadis' passing, in 1975, also signalled Doxiadis Associates' restructuring and the collapse of the diverse activities, professional and intellectual networks initiated by him between the 1960s and the early 1970s. Thirdly, from

29 R. Young, *Postcolonialism: an historical introduction* (Malden, Mass, Blackwell Publishers, 2001), p. 45.

30 In a way measuring the failures of the earlier development agendas a UN meeting in 1969 emphasized: "The fact that development either leaves behind, or in some ways even creates, large areas of poverty, stagnation, marginality, and actual exclusion from economic and social progress is too obvious and too urgent to be overlooked." See, United Nations. Economic and Social Council; United Nations. Economic Commission for Africa. *Social policy and planning in national development: report of the meeting of experts on social policy and planning held at Stockholm from 1 to 10 September 1969.* (Geneva, Switzerland, 1970)

31 See N. Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore, JHU Press, 2003), p. 257.

32 Neoliberal ideology's two key premises are the deregulation of the markets to promote free trade, and the idea of the market as an optimization mechanism.

this point forward, developmentalism would come under systematic scrutiny from post-structuralism, feminist and postcolonial studies, radical geography and so on, leading to a significant volume of critical theories which inform this thesis' theoretical approach.

For this thesis' goal of introducing architectural/spatial and postcolonial perspectives into development histories, those ethnographic studies which uncovered how "a 'global' discourse like "development" is profoundly transformed through crises of realization in different locations"[33] are crucially important. Rather than a monolithic/hierarchical history of development, written from the perspective of the West/North or from the perspective of the postcolonial State, this thesis subscribes to Gupta's call "to maintain the tension between the universalizing and globalizing power of development discourse and its disputed and contentious redeployment in particular cultural and historical locations."[34]

Within this timeframe, the thesis focuses on different periods/instances of Doxiadis' thinking and links between the planning activity of Doxiadis Associates and the evolution of development. For instance, the shaping of development by Cold War priorities, the imperative of economic control at the national and international level, the logic of international economic/technical assistance, and the "techno-politics" development model provide the historical/geopolitical background for this study's focus on Doxiadis' role in the Greek Reconstruction of the mid-1940s (Chapter 2) and Doxiadis Associates' involvement in planning in the 1950s in the Middle East and Southeast Asia (Chapter 3). The "techno-politics" perspective on development shape this thesis' focus on the large-scale spatial vision of Doxiadis Associates and on Doxiadis' vision of planetary development (Ecumenopolis) (Chapter 4). Finally, the non-aligned alternative discourses on development, as these emerged in parts of the Third World, inform the focus on postcolonial Africa in the 1960s and 1970s (Chapter 5).

33 A. Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham, N.C., Duke University Press, 1998)

34 *Ibid*, p. 15.

On postcolonial Africa

The notion of *postcolonial Africa,* expresses both a historical context and a critical content.[35] Its definition lies in the use of the term *postcolonial* to denote broader transformations associated with the decolonisation and post-independence periods, as well as discourses, practices and visions aimed at negotiating, resisting and overthrowing colonialism's social, economic, and cultural injustices. The postcolonial condition thus extends before and after the end of colonial rule and its impact can be traced in former colonial and colonised countries. As a critical theoretical approach, postcolonialism developed in the 1990s, drawing on Marxism, post-structuralism, feminism and the multiple legacies of anti-colonial discourses. Postcolonialism has since developed into a cross-disciplinary field[36] that aims at a "critical reading of the multiple and decentred modernity through the perspective of its (obscured) colonial history and their postcolonial continuities and ruptures."[37] It aims to suggest alternative understandings, both for the (colonial) past and the (postcolonial) future beyond the dominance of white/male/western/European knowledge/power.[38]

Beyond the above-mentioned critical theoretical approaches, this thesis understands the *postcolonial* also through a spatial perspective as exemplified by Africa's colonial/postcolonial histories. In this light, the notion of *postcolonial Africa* alludes to spatial visions for Africa that aimed to transcend colonialism. Such a vision can be found in the critique by Frantz Fanon (the well-known Martiniquan psychiatrist/philosopher and anti-colonial intellectual) of colonial Africa as a "compartmentalized world […] a world divided in two."[39] This critique drew attention to colonialism as a violent act of dividing space along racial lines: into

35 This definition merged the earlier discussion in postcolonial studies over the terms *post-colonial* and *postcolonial*, where the first was used to denote the historical period after colonialism, and the second the theoretical critiques on colonial forms of knowledge. See A. Loomba, *Colonialism/postcolonialism*. (London, Routledge, 1998), pp. 1-20.

36 See for example A. Blunt and C. McEwan, eds, *Postcolonial geographies* (London, Continuum, 2002); C. McEwan, *Postcolonialism and Development* (London, Routledge, 2008) ; J. Sharp, *Geographies of Postcolonialism* (London, Sage, 2008).

37 See A. Athanasiou, ed., *Αποδομώντας την αυτοκρατορία: Θεωρία και Πολιτική της Μετααποικιακής Κριτικής [Deconstructing the Empire: Theory and Politics of Postcolonial Critique]* (Αθήνα, Νήσος, 2016), p. 16.

38 See for example, W. Mignolo, *The Darker Side of Western Modernity: Global Futures, Decolonial options* (Duke, Duke University Press, 2011); W. Mignolo and A. Escobar, eds. *Globalization and the Decolonial Option* (London, Routledge, 2013).

39 F. Fanon, *The Wretched of the Earth*, (New York, Grove Press, 2004 [1967]), p. 3.

European and native sectors. This division of space can be understood as crucial for colonial Africa, in serving as the basis upon which social relations and identities, resource extraction, development patterns, land use and rights were established. Thus, it shaped the conditions of social reproduction within each colony. As Mbembe highlights, this spatial compartmentalization assigned to the largest sections of black populations—especially in the rural areas—the responsibility for their own social reproduction and "circumscribed the phenomenon of poverty within racially associated enclaves."[40] Of course, spatial divisions and inequality transcended urban and rural spaces as Fanon emphasized:

> The 'native' sector is not complementary to the European sector […] The colonist's sector is a sector built to last, all stone and steel. […] its belly is permanently full of good things. The colonist's sector is a white folks' sector, a sector of foreigners […] The colonized's sector, or at least the "native" quarters, the shanty town, the Medina, the reservation, is a disreputable place inhabited by disreputable people. […] It's a world with no space, people are piled one on top of the other, the shacks squeezed tightly together. The colonized's sector is a famished sector, hungry for bread, meat, shoes, coal, and light.[41]

Thus, African colonialism was constituted on the capacity to imagine, but also to materialize, social divisions and hierarchies through space. By exposing these capacities, Fanon would also envision the *postcolonial* as a spatial project committed to the deconstruction of colonial (spatial) imaginaries, by "demolishing the colonist's sector, burying it deep within the earth or banishing it from the territory."[42]

Far from being an invitation to anti-colonial struggle, Fanon's appeal was also a symbolic claim staked at the moment of political independence. As he suggested, the emancipation of formerly colonized societies would begin with the spatial reorganization of the inherited colonial legacies, establishing new development patterns and addressing "the need for a

40 A. Mbembe, 'At the Edge of the World: Boundaries, Territoriality and Sovereignty in Africa', *Public Culture,* 12, 1 (2000), pp. 259-284.
41 F. Fanon, The Wretched of the Earth, (New York, Grove Press, 2004 [1967]), p. 4.
42 *Ibid*, p. 5.

redistribution of wealth."[43] Although Fanon saw this process taking place on the national stage, his vision was informed by universal, supra-national visions. Fanon outlined the main characteristics of postcolonial Africa in ways similar to those envisioned, and (later) promoted by, many African political leaders. This vision merged the socio-political aspirations of anti-colonial struggles, and the inter-war intellectual movements of *negritude*[44] and *Pan-Africanism*[45] in emphasising "pan-national racial solidarity."[46] It was also informed by the supranational visions of Non-Alignment, which (as explained earlier) aimed to transcend Cold War bipolarities.

In attempting to establish new geographical imaginaries on different scales these visions are considered important to this thesis' effort to contextualise developmental agendas and architectural/planning projects in Africa. The relationship between developmentalism and the mobilisation of geographical imagination was captured in statements like the following, by Léopold Sédar Senghor, Senegal's first president of Senegal: "We must build our own development plan, based on European, socialist contributions and also on the best of Negro-African civilization."[47] Similar declarations where made by other African leaders, mobilizing other geographies, ideologies and understandings of African values while each negotiating the realities of their specific spatial contexts and different colonial legacies (See Chapters 5 and 6). Drawing on this historical complexity, this thesis uses the notion of *postcolonial Africa* to describe the diverse social and spatial transformations which took place within national territories and economies at different times and speeds, and in different circumstances.

43 *Ibid*, p. 55.

44 Negritude focused on race as a source of cultural pride and political empowerment of Africans across contexts. It was promoted by French speaking intellectuals, such as Martiniquan poet Aime Cesair, Leopold Sedar Senghor, president of Senegal. See R. Young, *Postcolonialism: an historical introduction* (Malden, Mass, Blackwell Publishers, 2001), p. 261.

45 *Pan-Africanism* was mostly based in the Anglophone world and through various international conferences it developed in the 1940s into a socialist political movement addressing especially the African continent. Among the prominent figures of Pan-Africanism was Kwame Nkrumah, the president of Ghana which advocated African's self-determination, pan-national cooperation and unity R. Young, *Postcolonialism: an Historical Introduction* (Malden, Mass, Blackwell Publishers, 2001), p.236.

46 A. Loomba, *Colonialism/Postcolonialism* (London, Routledge, 1998), p. 211.

47 Cited in R. Young, *Postcolonialism: an Historical Introduction* (Malden, Mass, Blackwell Publishers, 2001), p. 272

The political/ideological failings of the postcolonial nation-state have been criticised by postcolonial theory and by feminist and subaltern studies. A recurrent critique was that the postcolonial states' "corruption and ethnic and gender violence cancelled the positive experience of nationalism […] while the bureaucratic structures of the nation state reproduced the racialized logic of [the] colonial state."[48] In this view, after colonialism ended, the sovereign states failed to fulfil the people's nation-building aspirations: to address colonial injustices, promote democratisation and egalitarianism, initiate a redistribution of wealth, and overall, to mobilise socio-economic and spatial development. Instead, they maintained social and spatial hierarchies or even contributed to the sharpening of socio-spatial polarisation. The emphasis on continuity between the colonial and postcolonial state also shed light both on continuing economic and political dependencies on former colonisers, and on external technocratic expertise that ignored local knowledge and existing social/ecological development patterns.[49] Quite often, these critiques tended to treat either the postcolonial state or international development organisations as homogenous and all-powerful actors, and subsequently, to shape an image of a 'passive' homogenous society. However, more nuanced approaches have seen the state as an "assemblage of everyday practices which are defined by conflicts between mechanisms within the state and between social actors."[50] Such approaches emphasised the interaction between state structures, international organisations and experts, the agency of powerful social actors, and the differentiated dynamics of various social groups.[51]

Drawing also on the above critiques, this thesis aims to consider the role of *spatial visions* in development histories of postcolonial Africa by focusing on Doxiadis Associates' work. Although Doxiadis Associates practiced in Northern, Western and Eastern Africa,[52] this thesis refers mainly to the socio-political contexts of Zambia (East/South) and Ghana (West), and

48 A. Athanasiou, ed., *Αποδομώντας την Αυτοκρατορία: Θεωρία και Πολιτική της Μετααποικιακής Κριτικής, [Deconstructing the Empire: Theory and Politics of Postcolonial Critique]* (Αθήνα, Νήσος, 2016), p. 41.

49 This critique comes from J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Yale University Press, 1998).

50 See D. Vaiou and C. Hadjimichalis, *Ο Χώρος στην Αριστερή Σκέψη [Space in Left Thinking]* (Αθήνα, Νήσος, 2012).

51 A. Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham, N.C., Duke University Press, 1998).

52 According to United Nations statistical divisions Africa is divided in Eastern, Middle, Northern, Southern and Western regions. They are used here in a tentative way, acknowledging the existence and overlapping of different divisions and groupings among countries for statistical, economic or other reasons.

only selectively to other African countries. This choice placed the focus first on Sub-Saharan geographies, rather than Northern Africa's Arab countries, and second on British rather than French colonial legacies.[53] Selecting these countries as the main focus of this thesis made it possible to understand *postcolonial Africa* through discourses of anti-colonialism, African socialism, Pan-Africanism and Non-alignment, all of which played a role in Zambia's and Ghana's postcolonial histories.

Research questions

This thesis is situated within a cross-disciplinary research field which examines how space, planning, and architecture shaped broader sociopolitical transformations initiated after the end of the Second World War. Specifically, it focuses on the critical role of architecture and planning during the post-war reconstruction of Europe, and the decolonization processes associated with the emergence of the so-called Third World. It investigates architecture and planning's ties to international agendas for social and economic development as these were pursued by supranational organizations and Western states while being shaped by both Cold War geopolitical tensions and the processes of nation- and state-building.

This study aims to pose — and respond to — these broader questions:

- How did architects/planners frame their discipline and practice within the priorities and rationalities of development?
- Which theoretical and scientific assumptions were mobilized, and what kind of transnational flows and academic, educational, and professional networks were shaped in the process?
- What was architects'/planners' contribution into shaping the objects and objectives of development discourses?
- Under what circumstances were concepts such as shelter, settlement, and infrastructure introduced into developmental agendas?

53 I could read English archives and I have done previous research experience on Cyprus, which was also a British colony.

- How was architectural knowledge shaped through the transnational and cross-cultural exchanges generated by international aid programs, planning projects, broader debates, and local specificities?
- How did architects and planners translate/adjust developmental agendas to specific/different contexts and the priorities and claims of the post-war, Cold War and postcolonial societies?
- What was their role in shaping alternative spatial visions and landscapes beyond the logic of development and 'neocolonial' dependencies?

Aiming to respond to these broader questions, this thesis performs a systematic study of Doxiadis Associates' engagement with the Third World, with special attention to postcolonial Africa. It analyses the different forms of spatial visions that emerged within architectural and planning projects, research and conceptual studies, and broader scientific and academic debates. These unfolded between the mid-1940s and the mid-1970s and transcended Greece's post-war Reconstruction, the decolonisation and nation-building process in 1950s Middle East and 1960s Africa.

This study's main research goals are:

a) To highlight the critical role played by Constantinos Doxiadis in promoting and shaping economic, architectural and spatial policies during the Greek Reconstruction in relation to and beyond the US-led assistance programs and their economic and geopolitical agendas (including the Truman doctrine and the Marshall Plan).
b) To investigate the circumstances and theoretical influences behind the shaping of *Ekistics*—the planning framework formulated by Doxiadis in the mid-1940s, considering housing and settlements as the main challenges of the Greek Reconstruction.
c) To trace Doxiadis' role in transnational networks of architectural expertise focusing on issues of low-cost housing, self-help programs and community-building which operated as vehicles of modernization in Southeast Asia and the Middle East in the 1950s.

d) To further investigate Doxiadis Associates' (and ultimately, architecture and planning's) critical role in promoting State-led land reforms, resource and population management, the mobilization of local traditions and the shaping of national/local identities.

e) In this context, to analyze how Doxiadis' Ekistics of the mid-1940s was reformulated into a planning framework for Doxiadis Associates' cross-cultural practice and a tool for socioeconomic change. In the mid-1960s, Ekistics became attuned to the particularities of the non-industrialized world, as well as becoming a vehicle for interdisciplinary exchange and projections of ambivalent global developmental and environmental visions. By tracing this reformulation, this thesis aims to understand how multi-scale planning emerged in the 1960s-1970s as a strategy to manage population and natural resources on a global/local level.

f) To investigate how Doxiadis' and Doxiadis Associates' ideas and planning practices were challenged and transformed by the sociopolitical and geopolitical context of postcolonial Africa in the 1960s and the 1970s. This study will focus on spatial visions at the continental, regional and local levels. It will examine how architecture and planning played a role in expressing national and supra-national political aspirations, in territorial visions of decolonization and national unity, and in negotiating alternative development models for land and resource access. This will be discussed in the context of complex land tenure systems, sociopolitical dynamics, and the legacy of colonialism.

The rural

The research objectives, along with the introductory remarks on notions of "spatial vision", "development" and "postcolonial Africa", refer implicitly or explicitly to another notion in the thesis' title: "the rural". This thesis traces the "rural" as it is implied in the intellectual elaborations of Constantinos Doxiadis, from the shaping of Ekistics to Ecumenopolis, and as the main focus of Doxiadis' reconstruction project in Greece and Doxiadis Associates' planning in Iraq or Zambia. Moreover, the "rural" seems to emerge not as a random choice of Doxiadis Associates' transnational professional practice but, rather, as a key development parameter

in different spatial contexts "in development" (from post-war Greece to the postcolonial Middle East, Southeast Asia, and Africa).

As can be noted, the "rural" is an ambiguous and complex concept, constituting at once a geographic category, an interdisciplinary research field and a field for policy making. According to Michael Wood,[54] the "rural" has been construed "as a source of food and energy; as a pristine wilderness, or as a bucolic idyll; as a playground, or a place of escape; as a fragile space of nature, in need of protection; and as primitive place, in need of modernization." In any case, the "rural" usually appears as a distinct category in relation to (or even opposing) the "urban", echoing the "pervasive geographic binary" between the "city" and the "country". Furthermore, "rural" implies links to agricultural production, and therefore, feeding — another pervasive binary between the primary (agricultural) and secondary (industrial, manufacturing) sectors of the economy.

Although theoretical elaboration of the "rural" falls far beyond the scope of this thesis, it is worth mentioning that ever since the French Revolution, the "rural" has been linked with radical land reform (including land redistribution) and with policies on farming and agricultural production, as promoted by different political structures, in various conjunctures and places around the world. This has been true throughout the 19th and 20th centuries in Southeast Asia, Latin America, China, and also, Greece). In particular, such reforms and policies have proved relevant *par excellence*, to the "non-industrialised" countries within development and postcolonial contexts, in Asia and Africa.[55] Subsequently, all these reforms and policies have had different goals, aspirations and outcomes. They were also often linked to major political changes and attempts to redistribute power, privileges and wealth. From this perspective, a key goal of this study is to examine ways that the "rural" may have constituted a locus of international development agendas, Cold War geopolitics, postcolonial nation-building and state-led planning visions.

54 See M. Woods, *Rural*, (London, Routledge, 2011).

55 See A. Martin, 'Land reform', In V. Desai and R. B. Potter, The Companion to Development Studies (London, Hodder Education, 2008), pp.161-165.

The exploration of multiple understandings of the "rural" does not aim to exhaustively map the different meanings of this ambiguous and complex concept. Rather, this thesis aims to offer insights into various ways the "rural" emerged within the analysis of spatial visions and planning practices of Doxiadis Associates; in developmental agendas in the Third World; and the history of postcolonial Africa. By both highlighting the significance of the "rural" and questioning the "rural vs. urban" binary, the thesis seeks to provide privileged perspectives on the intellectual and professional work of Doxiadis and Doxiadis Associates as well as development and postcolonial studies.

> A **main hypothesis of the study** is that the "rural" allows for the creation of a critical perspective that enriches our knowledge of Doxiadis and Doxiadis Associates beyond the well-established historiographies that portray Doxiadis as the epitome of the modernist 'urban' planner. Also, a rethinking of Doxiadis' genealogies of rural planning could allow revisiting the critical role of architecture and planning in Third World developmental agendas, wherein a focus on postcolonial Africa can further expose the geopolitical aspirations, spatial visions, and social dynamics implicated in governing the rural.

Hence, the "rural" serves for this thesis as a research hypothesis, a thread of conceptual organization and a methodological tool.

On methodology

Combining archival study with critical historical/theoretical analysis, this thesis' methodology developed in response to the complexities of the object of study. It involved systematically studying multiple archival sources and an extensive bibliography, while investigating the transnational histories of post-war architecture/planning and their ties to developmental agendas in the context of postcolonial Africa. This methodology draws on theoretical approaches that cross boundaries of critical architectural historiography, transnational cultural studies, and geographical/spatial perspectives.

Critical architectural historiography: From discourse to governmentality

Critical architectural historiography is a research field developed in the 1990s from the rethinking of architectural history through the contributions of postcolonial theory, cultural and feminist studies, and the direct and indirect influence of French post-structuralism — especially Michel Foucault's discourse analysis. In this context, architectural historians moved away from stylistic analyses of buildings towards studying architectural discourse and practice within broader cultural contexts.[56] This move helped uncover architecture's ties to different scientific, cultural and political discourses and its complicity with knowledge/power regimes.[57] Driven by a decisive turn towards archival studies, historians and theorists began contemplating architecture's own *archive*[58] to understand how the historical, socio-political and technological conditions shape architecture, not only as a discipline, but also as a built environment.

Architecture was no longer conceived of as a practice focused on the design of autonomous buildings with architects as protagonists, but as a multi-scale and multi-actor practice found at the intersection of the "complex interactions of bureaucracy, technology, firms, financing, resources, law, institutions, knowledge frameworks."[59] Influential studies explored how architecture responded and participated in the immense cultural and technological transformations that took place after the Second World War and during the Cold War.[60] In dialogue with postcolonial theory, cultural and feminist studies, and critical geography, these more complex and critical framings of architectural histories challenged historiography's earlier Eurocentric assumptions, shifting attention to the histories of non-Western

56 See for example, P. Tournikiotis, *Historiography of Modern Architecture*, (Cambridge, Mass., MIT Press, 1999); H. Heynen, *Architecture and Modernity: a Critique*. (Cambridge, Mass., MIT Press, 2000).

57 See for example, P. Rabinow, *French Modern: Norms and Forms of the Social Environment*. (University of Chicago Press., 1995).

58 Foucault aimed to show, with this statement, that the archive is rather "rules of practice" that shape what can and cannot be said. M. Foucault, 'The Statement and the Archive', *The Archaeology of Knowledge and the Discourse on Language*, Part III (1972), pp. 79-134; and M. Foucault, 'On the Archaeology of the Sciences: Response to the Epistemology Circle', in M. Foucault, *Aesthetics, Method, and Epistemology*, (New York, The New Press, 1998), p. 304.

59 Aggregate, *Governing by Design: Architecture, Economy, and Politics in the Twentieth Century* (Pittsburgh: University of Pittsburgh Press, 2012).

60 See for example, R. Martin, *The Organizational Complex: Architecture, Media and Corporate Space*. (Mit Press, 2003); B. Colomina (ed.). Cold War Hothouses: Inventing Postwar Culture, From Cockpit to Playboy. (Princeton Architectural Press, 2004); F. Scott, *Architecture or Techno-utopia: Politics after Modernism*. (Cambridge, MA: MIT press, 2007 A. Dutta, ed., *A Second Modernism: MIT, Architecture, and the 'Techno-Social' Moment*. (SA+ P Press, Department of Architecture, MIT, 2013).

modernism. In this light, the study of colonial history exposed architecture's close ties to political (and colonial) power as well as the various symbolic and material ways through which it captured the political and social antagonisms of colonial societies.[61] Focusing on power relations and the built environment, historiography went beyond the analysis of buildings' symbolic operation, situating the study of architecture within the larger focus of broader socio-spatial processes.

These methodological and thematic shifts reinforced historiography's focus on mid-twentieth century architecture and the study of intense processes generated by decolonization and nation/state-building which generated the transformation of the built environment in the so-called Third World.[62] Within this research field, recent studies also consider the impact of geopolitics and the Cold War, which placed architecture and planning within transnational flows of knowledge, aid and capital. Attempts to examine these flows, beyond the dominant perspectives, exposed the understudied histories of socialist networks and the role the Second World (the Soviet bloc) played in the making of the Third World,[63] while also focusing on alternative geopolitical alliances and even forms of non-alignment behind the shaping of architecture.[64] More recent studies that explore the connections between space, architecture

61 See K. James-Chakraborty, 'Beyond Postcolonialism: New Directions for the History of Nonwestern Architecture. *Frontiers of Architectural Research*, 3(1), (2014) pp.1-9.

62 See for example, S. Bozdoğan and R. Kasaba, eds., *Rethinking Modernity and National Identity in Turkey* (Seattle, University of Washington Press, 1997); S. Bozdoğan, *Modernism and Nation Building: Turkish Architectural Culture in the Early Republic* (Seattle, University of Washington Press, 2001); S. Bozdoğan and E. Akcan, *Modern Architectures in History: Turkey* (London, Reaktion Books, 2012); E. Ackan, *Architecture in Translation: Germany, Turkey, and the Modern House* (Durham, NC: Duke University Press, 2012); P. Pyla and P. Phokaides, Petros, 'Ambivalent Politics and Modernist Debates in Postcolonial Cyprus', *The Journal of Architecture,* 16, 6 (2011); T. Hyde, *Constitutional Modernism: Architecture and Civil Society in Cuba, 1933-1959* (Minnesota, University of Minnesota Press, 2013).

63 ŁStanek, Łukasz. "Socialist Networks and the Internationalization of Building Culture after 1945." *ABE Journal. Architecture beyond Europe* 6 (2014).

64 R. Kallus, 'The Crete Development Plan: a post-Second World War Israeli Experience of Transnational professional exchange', *Planning Perspectives*, 30, 3 (2015); L. Beeckmans, 'The Adventures of the French Architect Michel Ecochard in Post-Independence Dakar: a Transnational Development Expert drifting between Commitment and Expediency', *The Journal of Architecture*, 19, 6 (2014); N. Feniger and R. Kallus, 'Building a 'New Middle East': Israeli Architects in Iran in the 1970s.', *The Journal of Architecture,* 18, 3 (2013); A. Levin, 'Haile Selassie's Imperial Modernity: Expatriate Architects and the Shaping of Addis Ababa.' *Journal of the Society of Architectural Historians*, 75(4), (2016), pp.447-468.

and the politics of development[65] are particularly important for this thesis — especially those focusing on the architectural and planning history of postcolonial Africa.[66]

This growing body of critical scholarship on the history/theory of post-war modern architecture, and the broader cultural and material upheavals of the postcolonial and Cold War era, capture the transformation of architecture and planning as "tool[s] of politics" into a "mode of politics."[67] Planning was no longer narrowly defined as reflecting social process in symbolic forms, or operating as instruments for consolidating State power, architecture and planning. It could now be understood as among the practices, forms of knowledge, and techniques tied to dispersed forms of power and attempts "to deliberate on and to direct human conduct."[68] This form of power, which Foucault termed *governmentality*,[69] introduced a different research perspective for architectural historiography. It involved investigating "architecture governing conduct—mediating power—through networks and norms, frames of action and possibility that flow through all scales from the body to the home to the city to the globe, at the hands of not just the state but also individuals and institutions."[70] In this light, focusing on the post-war/postcolonial era, architecture and planning had to be analysed

65 P. Pyla and P. Phokaides, 'The most dam-dense country in Europe': Ethnic Conflict and Supra-national claims in Cyprus,' in Filippo Menga and Erik Swyngedouw, eds., *Water, Technology and the Nation-State*, (Routledge, Earthscan, 2018); I. Muzaffar, 'Fuzzy images: the Problem of Third World Development and the New Ethics of Open-Ended Planning at the MIT-Harvard Joint Center for Urban Studies" in A. Dutta, *A Second Modernism: MIT, Architecture, and the "Techno-Social" Moment* (Cambridge, Massachusetts: SA+Press, Department of Architecture, MIT, 2013); I. Muzaffar, 'The World on Sale: Architectural Exports and Construction of Access' in *Office US Agenda, the catalogue of the US Pavilion at the Venice Biennale*, (2014) ; P. Pyla, 'Beyond Smooth Talk: Oxymorons, Ambivalences, and Other Current Realities of Sustainability', *Design and Culture*, 4, 3 (November 2012); P. Pyla, ed., *Landscapes of Development: The Impact of Modernisation Discourses on the Physical Environment of the Eastern Mediterranean* (Cambridge, Harvard University Aga Khan Program, 2013), I. Muzaffar and J. Otero-Pailos, 'Editors' Introduction: Preservation and Globalization', *Future Anterior: Journal of Historic Preservation, History, Theory, and Criticism* 9, 1, (2012).

66 See for example, P. Phokaides, "Rural Networks and Planned Communities: Doxiadis Associates' Plans for Rural Settlements in Post-Independence Zambia." *The Journal of Architecture* 23, no. 3 (2018), pp. 471-497; S. Łukasz, 'Socialist Networks and the Internationalization of Building Culture after 1945', *ABE Journal. Architecture beyond Europe,* 6 (2014). Ł. Stanek, "Architects from Socialist Countries in Ghana (1957–67): Modern Architecture and Mondialisation." *Journal of the Society of Architectural Historians* 74, no. 4 (2015): 416-442; A. Levin, A. and N. Feniger, 'Introduction: the Modern Village.' *The Journal of Architecture*, *23*(3), (2018) pp.361-366.

67 G. Hecht, ed, *Entangled Geographies: Empire and Technopolitics in the global Cold War* (Cambridge, MIT Press, 2011), p. 3.

68 M. Dean, *Governmentality: Power and Rule in Modern Society* (London, Sage, 2010 [1999]).

69 *Ibid*

70 Aggregate, *Governing by Design: Architecture, Economy, and Politics in the Twentieth Century* (Pittsburgh: University of Pittsburgh Press, 2012)

in relation to the novel (global) rationalities of governing populations, bodies, economies, and spaces, "of which development [was] a primary example."[71] Among the research goals of this thesis is to understand architecture and planning's role in shaping the global governmentalities that emerged out of the Cold War's global divides, international organisations' economic agendas, and the aspirations for a postcolonial world. Conversely, it aims to discover how these governmentalities take architectural form, shape spaces and landscapes.

Transnationalism and the politics of scale

Post-war (global) governmentalities presuppose, and mobilize, the international movement of people, objects, capital, knowledge, agendas, visions, ideas and aesthetics, reformulating the relationship between global and local. Although focusing on post-Cold War globalisation, Appadurai has offered a theoretical schema to analyse globalization or internationalization as a "deeply historical, uneven, and even *localizing* process."[72] Challenging the primacy of the global *and* the local, Appadurai highlights the "disjunctures and differences" that constitute these globalizing and localising processes. In other words, not only are international agendas, global visions and ideas the products of specific locales that become globalised, but they do not simply flow from one place to another uninterrupted. Instead, they are localised, disrupted, and reshaped in their encounter with local circumstances, contexts and actors.

Interrogating global/local binaries, does not mean replacing the illusion and fear of cultural homogenisation (globalisation) with one of complete hybridisation. Turning to a "friction-based approach" as Anna Tsing proposes, "reminds us that heterogeneous and unequal encounters can lead to new arrangements of culture and power."[73] From the perspective of friction, "difference and diversity are not necessarily positive" nor can they simply be narrowed down to "exploitation and oppression."[74] Rather, frictions-based approaches challenge the homogeneity of top-down and bottom-up narratives and promote a nuanced understanding that includes "many other kinds of difference-based interactions, including

71 A. Gupta. *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham, London, Duke University Press, 1998), p. 34.
72 A. Appadurai, *Modernity at large* (Minnesota, Minnesota University Press, 1996), p. 17.
73 A. Tsing, *Friction: An Ethnography of Global Connection*. (Princeton University Press, 2011), p.5.
74 A. Tsing, "Frictions." *The Wiley-Blackwell Encyclopedia of Globalization*, (2012),p. 1

alliance, borrowing, merging, translation, and accommodation."[75]

Cultural and ethnographic studies have extensively reviewed these complexities by studying how global/international discourses like colonialism, modernity, science, and development have originated in specific historical/geographic locations and then become localised in quite different places, and in various ways. By questioning the hierarchy of global/local, attention is placed on the trans-local flows of ideas and knowledge, and the transnational connections among actors and places. The perspective of transnationalism,[76] sheds light on the flows of knowledge, people and capital that characterised the post-war era and the transnational network of professionals and experts involved in the production and transfer of knowledge. Transnational perspectives further help highlight the complex interactions between different actors on different levels: government departments, international developmental agencies, construction firms, planning offices, other non-state actors and local communities. These existed, in collaboration or in conflict, at various scales, and interacted with broader social, cultural and geopolitical influences.[77]

Focusing on transnational flows and networks further problematizes binaries, such as international vs. local, universal vs. particular, and guards against both universalist assumptions and essentialising/exoticizing the local. Rather it is the tension between the two scales that makes them crucial for the shaping of worldviews. As Tsing claims, "Scale is the spatial dimensionality necessary for a particular kind of view, whether up close or from a distance, microscopic or planetary" which plays a crucial role in any "project that makes us imagine globality in order to see how it might succeed […] [or] make us imagine locality, or the space of regions or nations, in order to see their success."[78] Rather than a "neutral frame for viewing the world", scale is a crucial cultural and political instrument which is proposed, manipulated and practiced and consequently, "claimed and contested."[79] The perspective of geographical scales in cultural and political projects enables us not only to interrogate the

75 *Ibid*.
76 M.P. Smith, *Transnational Urbanism, Locating Globalization*, (Oxford: Blackwell, 2001)
77 See A. Bebbington, Anthony, and U. Kothari. "Transnational development networks." *Environment and Planning* A 38, no. 5 (2006), pp.849-866; U. Kothari, U., 2005. Authority and expertise: The professionalisation of international development and the ordering of dissent. Antipode, 37(3), pp.425-446.
78 A. Tsing, *Friction: An Ethnography of Global Connection*. (Princeton University Press, 2011), p.58.
79 *Ibid.*

neutrality of architectural and planning scales, but also to contemplate their role in "scale-making projects" of the postcolonial era. Among these are the role of scale in architectural and other practices and in planning techniques, where scales are critical for the management of population and territory. Geographical scales, such as local, national, regional, global scales, are also embedded in social and cultural visions, imaginaries, identities and various forms of politics. All these different, explicit or implicit, mobilisations of scales are crucial in framing individual and collective subjects. Spatial scales are thus integral to an analysis of post-war uneven impact of spatial development.[80]

Spatial/geographical perspectives

Architectural historiography and transnational-cultural studies, touch upon the issue of space in different ways, though not always explicitly. Nor do they always theorize how space is important in the broader sociopolitical transformations they attempt to analyse. Rather, this theorization has been the focus of critical geography. As Harvey emphasizes:

> The relations between social processes and spatial forms needed to be better understood as a prerequisite to well-grounded critical research on urbanization, modernization, diffusion, migration, international capital flows, regional development, uneven geographical development, geopolitics, and a host of other subjects of considerable importance.[81]

From this perspective, space is perceived as dynamic, as something which cannot be perceived "outside of the processes that define it."[82] As such, "human practice and space are integrated at the level of the concept of space 'itself'."[83] These analyses draw on Henri Lefebvre's theory of the "production of space" in which space is understood as an outcome,

80 N. Smith, *Uneven Development: Nature, Capital, and the Production of Space* (New York, NY, Blackwell, 2008 [1984]), Chapter 5, p. 119

81 D. Harvey, *A Brief History of Neoliberalism*, (Oxford, Oxford University Studies, 2005), p. 215; D. Massey, *For Space*, (London, Sage, 2005).

82 D. Harvey, *A Brief History of Neoliberalism*, (Oxford, Oxford University Studies, 2005).

83 N. Smith, *Uneven Development: Nature, Capital, and the Production of Space* (New York, NY, Blackwell, 2008 [1984]), p. 107)

but also a crucial determinant, of how social, cultural and economic processes unfold in relation to the material, symbolic, and empirical dimensions of space.[84]

The framework of critical geography considers space not as a mere reflection of social processes, but rather as a dynamic component deeply enmeshed in broader historical transformations. Drawing on Lefebvre and Marx, and informed by 1960-1970s critiques on development, a number of studies in the mid-1980s focused on (geographical) space as key to understanding the transformations associated with the global expansion of capitalist modes of production. Working within a historical-geographical framework, these studies introduced the notion of "uneven geographic development"[85] in which the "uneven" combined two crucial reflections. First, as Soja states, "the spatiality of social life, whether capitalist or not, is always unevenly developed."[86] This further implied that the expansion of capitalism "has not been a simple process of homogenization" but a "complex and conflict-filled process of articulation characterized both by disintegration and by preservation of non-capitalist societies, by homogenization and fragmentation, differentiation and equalization."[87] Such analyses indicate the heterogeneous, fragmented, situated and contested nature of capitalism's expansion.

These approaches however did not propose an infinitely differentiated space but understood imbalances as integral to the process of capitalist expansion.[88] Such imbalances are the result, not only of existing geographical differences, but also of internal contradictions within capitalism itself, which as Marx had already noted, include capitalism's constant quest for profit/accumulation and the competition for market-share, as well as the drive for technological innovation in production processes.[89] Critical geography analysed physical space, built landscapes and infrastructure as key for capitalist expansion and for securing new

84 H. Lefebvre, The Production of Space, (Oxford, Blackwell, 1991).

85 On the theories of 'uneven development', regional development, See D. Vaiou and C. Hadjimichalis, *O Χώρος στην Αριστερή Σκέψη* (Αθήνα, Νήσος, 2012), pp. 121-134.

86 E. Soja, "Regions in Context: Spatiality, Periodicity, and the Historical Geography of the Regional Question." *Environment and Planning D: Society and Space* 3, no. 2 (1985), p. 185.

87 *Ibid*, p.180.

88 As Neil Smith, highlighted: "Space is neither levelled out of existence nor infinitely differentiated. […] Uneven development is the concrete manifestation of the production of space under capitalism." N. Smith, *Uneven Development: Nature, Capital, and the Production of Space* (New York, NY, Blackwell, 2008 [1984]), p. 123.

89 P. Hubbard, and R. Kitchin. *Key Thinkers on Space and Place*. (London: SAGE, 2011), p.184.

pools of resources, land and labour, and new markets, but also, as long-term fixed investments that allowed capitalism to overcome its internal contradictions.[90] In this process, some areas were developed while others were ultimately ignored or 'underdeveloped', creating patterns of dependency and exploitation on various scales, while drastically re-shaping urban and rural landscapes.

Critical geography introduced spatial perspective into economic theories of development in the 1960s. In so doing, they shaped an over-arching theory which transcended critiques on development, while bringing to the fore, social and material conditions that generated and promoted capitalism. Under the imperative of capitalist expansion, critical geography faced criticism for expressing a Marxist worldview which did not "accommodate 'difference'" and the "messy complexities of the real world."[91] Aiming to overcome these limitations, geography (especially in Anglo-American academia) focused on "non-economic factors and institutions […] in order to explain why some regions are more dynamic than others", so much so that, as Hajimichalis argues, it neglected economic and political perspectives in the field of radical geography.[92]

These perspectives are important for this study for highlighting the uneven spatiality of social, cultural and economic processes, and the production/reproduction of space and landscapes through various forms of global, market, and state capitalisms. It is also important for their critiques on the assumptions, methods, and models used extensively by post-war modernist planners and developmental experts. On these assumptions, critical geography offers a historical/theoretical framework which allows us to contemplate the broader role of architecture and planning in advancing and negotiating the impact of capitalism in different contexts and especially on the non-industrialized world. Thus, critical geography supports this study's goal of critically investigating the role of spatial visions and planning in relation to development agendas between the 1950s and the 1970s.

90 See for example D. Harvey, *Spaces of Capital: Towards a Critical Geography*. Routledge, 2001.

91 D. Simon, (ed.) *Fifty Key Thinkers on Development* (London, Routledge, 2006), p. 240.

92 Hadjimichalis calls for "a far more penetrating renewal of radical critique of the current space economy of capitalism." C. Hadjimichalis, "Non-Economic Factors in Economic Geography and in 'New Regionalism': a Sympathetic Critique." *International Journal of Urban and Regional Research* 30, no. 3 (2006): 690-704.

However, the study aspires to add nuances to these analyses by historicizing and contextualizing planning histories in Africa. The study emphasizes the multiple influences and the antagonisms behind the production of space and landscapes, including, architectural discourses, cultural/political visions, administrative/scientific colonial legacies, developmental agendas, and elite and local societal aspirations. While being "conscious of capital's hegemonizing operations, [is] yet unwilling to reduce history to its logic" offering rather "an acute sensitivity to contingency and conjuncture in processes of change."[93] So, rather than adopting one overriding explanatory schema, this study aspires to maintain the tension among theoretical approaches which operate in a complementary fashion to explain the complexity of history while keeping open the potential for alternative readings.

Studying archives

The rich scholarship on the politics of the archive has uncovered not only the complex processes of collecting, storing and classifying information, but also the social/cultural conditions, technological capacities, and workings of power that formulate rules of what can be said and what can be remembered.[94] Archives are neither neutral stores of documents, nor physical sites where vast collections of records simply linger. They don't merely register *what could be said*, but are also defined by *what could not be said* and what resisted documentation.

However, neither are archival processes constantly under the control of a sovereign form of power. Gaps and excesses of information accumulate continually from the moment the collection mechanisms are set up. In this respect, studying archives does not necessarily ensure transparency, or closeness to historical 'truth', and an exhaustive reading of the archival sources does not guarantee superior knowledge.

Heterogeneity and difference are not necessarily reflected in the architectural archives. The local societies, various users, individuals and social groups, which are often key objects of analysis in architectural surveys and planning projects, are usually absent, or filtered. They

93 J.Pollard, Jane, C. McEwan, and A. Hughes. 2011. Postcolonial economies. (London: Zed Books, 2011), p.10.
94 See for example A. L. Stoler, *Along the Archival Grain*. (Princeton University Press, 2010)

may also be interpreted through different kinds of representations. At the same time, these subjects should not be considered homogenous, or passive, or powerless, even though they may be 'silent' in the documents. However methodically and critically we read archives, however fine-tuned the theoretical tools we employ, we must remember that not all positions are equal, and not all voices equally strong. It is thus crucial to keep a critical and conceptual distance from the protagonists' attempts to shape built landscapes and social reality according to their own visions and representations, even if it is not the intention of this study to offer a view on architectural history from the perspective of the users or the local society. This distancing allows also to critically reflect on the assumption that architects/planners, or states, are all-powerful agents and to the assumption that their interests or views are always aligned. This study aims to complexify, historicize and contextualise the relationships between experts, state, and social dynamics, and so remain aware of architecture's engagement with real places, even if these can only be partially reconstructed.

This thesis relies on the systematic study of archival material from multiple sources including architectural archives, government documents, international agencies' reports, and published material which is briefly noted below.

The primary source of information for this study was the **Constantinos A. Doxiadis Archives** (hereafter, Doxiadis Archives), financed by the Constantinos and Emma Doxiadis Foundation and hosted at the Benaki Museum, Athens.

Doxiadis Associates' archives is the physical site which stores and makes accessible an exhaustive collection of archival material. This is the product of multiple intersecting operations in which Doxiadis had a central role from the 1940s until the 1980s. The archives unquestionably bear the strong mark of Constantinos Doxiadis. His varied activities began well before 1953, when Doxiadis established a vast mechanism of professional, planning, educational, research, documentation, publishing and business activities around DA. As is often acknowledged, during and right after the Second World War, Doxiadis' obsession with data collection and classification, quantitative methods and statistical tools, was integral to his concept of planning. The processes of accumulating, circulating and documenting

information continued to expand, with the multifarious activities of Doxiadis and the transnational network of Doxiadis Associates. Attempting to stay in control of these significantly dispersed ventures, and to compensate for the lack of physical presence, Doxiadis increased his travelling and relied even more on various forms of communication, such as writing memos, taking notes, making audio recordings, and exchanging letters, accumulating even more information — some in Greek, but most, written in English.

The standardisation and codification of information permeated practically all DA's activities and supported the transnational operation, which relied on planning missions across diverse contexts, and enabled communication across parallel research, educational and administrative programmes. These communication and information-driven mechanisms were also used to develop outlets and channels that disseminated Doxiadis' ideas and his various activities to international audiences, and supported the development of an extensive and diverse network of associates, collaborators, and social/professional contacts.

An information bulletin used initially for internal communication among Doxiadis Associates' staff was developed into an international journal (*Ekistics*), which published articles on planning and other disciplines. *Ekistics* was often used to document research activities and to record the debates of several scientific meetings organised in Greece (the Delos Symposia). Doxiadis Associates' work was publicised to staff and clients through a pamphlet (*DA Review*) which offered updates of the various projects, frequently emphasising the firm's transnational presence and diverse portfolio. The operation of these information-dependent mechanisms, and many others not mentioned here, form the exhaustive archival collection of Doxiadis Archives. It records not only activities where Doxiadis had a central role, or left his mark, but also traces a much broader transnational planning and intellectual culture as well as its shifts from the mid-1940s all the way up to the 1970s. All these documents informed the development of this thesis. The main tool used to search this vast collection and study the material, was the JSTOR online database, along with the digitised *Ekistics Journal*.

This study also undertook to systematically read archival material related to the work of Doxiadis Associates in specific countries: especially Zambia. The relevant material remains as the office originally organised it. The records are sorted by country and by year. The

documents are classified under two main categories: Reports and Correspondence. Less frequently, administrative content and guidelines were classified as Memoranda and Circulars. The same codification system was used by the Athens office (e.g., ZAM(bia)-A(thens)) and by the local office (e.g. ZAM(bia)-LA(Lusaka)). Incoming correspondence was separated from outgoing. An extensive quantity of documents allows us to reconstruct the timeline of the various projects, the names of involved personnel and local actors, and the various final reports submitted to the clients, which also include drawings. The exchanges between Athens and local offices shed light on the various debates on planning strategies, while outgoing correspondence from local office to clients offers important insight into the relationship between the firm and government officials, ministries and other public services. However, **a significant gap in these archives is the absence of incoming correspondence from the local office**. One can study the correspondence between Athens and local offices, and the outgoing correspondence of local offices towards Athens and government departments. However, the missing incoming correspondence prevents us gaining a better view of the official responses and views of local government actors about the firm's work. Fragments of such responses are sometimes included as attachments and recorded among the exchanges of Doxiadis Associates staff.

Direct communication between Doxiadis and local offices bypassed or complemented the official channels. The recipients were associates — usually the firm's own representatives, or people with whom Doxiadis had a close relationship. One example is the correspondence between Doxiadis and Kostas Kakisopoulos, who was representing the office in Iraq and Zambia. This correspondence includes private exchanges on a range of topics: personal issues, office strategy, political climate, and internal tensions. Such material, which is partially included in the Archives, offers insight into the local context, and the associates' personal experience, which is not easily found in official exchanges or Doxiadis' more extensive personal correspondence.

In the same manner, the intentions or personal views of Doxiadis and other key associates were discussed carefully or avoided in official correspondence, in an effort to protect the firm's interest and reputation among its clients. The uninterrupted circulation of information was important to keeping control of their vast activities around the world. However, for an

international firm which competed for commissions in antagonistic professional environments, and which had to maintain loyalty in volatile political situations, keeping control of that information was also critical.

The archival research extended also to secondary material located in accessible, organised archives or in unpublished private collections, aiming to complement and to expand knowledge gained from the Doxiadis Archive. The following collections were studied:

- **Papers of Jaqueline Tyrwhitt (1905-1983), Royal Institute of British Architects (RIBA, Victoria & Albert Museum)**

This collection of the architect Jaqueline Tyrwhitt's papers (see more in Chapter 1.1) includes material and information on the relationship between Tyrwhitt and Doxiadis, which began in 1954 after an international architectural conference organised by Tyrwhitt in New Delhi, India. Consulting additional material on Tyrwhitt's extensive professional and teaching activities shed light on the broader international planning culture and post-war architectural debates in which Tyrwhitt and Doxiadis participated. This archive was visited in August 2015.

- **Private collection, Michael Ionides, Cambridge, UK.**

Michael Ionides (1903-1978) was a British hydraulic engineer with an extended involvement in irrigation projects in the Middle East from the 1930s to the 1950s. He was a member of the Development Board in Iraq (see Chapter 3), where he met with Doxiadis. He collaborated with Doxiadis Associates in several projects in the 1960s. The study of this unclassified collection offered insights into Ionides' long career in water management, and his collaboration with DA. This collection was visited in Cambridge, in August 2015.

- **Private archive of Angeliki and Manthos Dori**

This collection includes personal correspondence and other documents of the architect-couple Manthos and Angeliki Dori. They had joined Doxiadis Associates in Iraq at the end of the 1950s, and later Angeliki continued as a free-lance architect. Manthos worked in Athens, Ghana and Zambia and became head of DA's architectural department. This collection was consulted at the architectural office of Christina Dori, in Filothei in July 2016 and September 2017.

The reading of archival material from Doxiadis Associates was complemented by the study of books and other documents that were found in libraries, and online databases.

- **The 'Doxiadis Library', at the School of Architecture, NTUA**.

The 'Doxiadis Library' was established in 1998 to manage a significant collection of books and other material donated to the School of Architecture, NTUA, by the Constantinos and Emma Doxiadis Foundation. This material was part of the research library of the Athens Centre of Ekistics (ACE) founded by Doxiadis in 1958. These books and other documents were used to support extensive planning and research activity. Thus, they hold significant resources which provide not only valuable insights into the historical context of various countries, but also into the planning practices of Doxiadis Associates. The study directly examined a number of books and other documents that supported the archival study in many ways, by providing valuable information on economic development, history, and socio-cultural aspects of life in African countries, as well as information on the activities of international organisations, such as the UN FAO (Food and Agricultural Organization). Some of the documents studied at the Doxiadis Library include the *First National Development Plan 1966-1970*, Republic of Zambia: Office of National Development and Planning, July 1966; George Kay, *Social aspects of village regrouping in Zambia*. 1967; Food and Agriculture Organization, *Land and Water Use Survey in Kordofan Province, the Sudan: Final Report*, Rome: United Nations Development Programme, 1967.

In addition to archival material and the bibliography, this study also relied on reading digitized **documents found in online databases**. These included the United Nations Archives (https://archives.un.org), and the web archives of the World Bank (formerly the International Bank for Reconstruction and Development (http://documents.worldbank.org), as well as digital libraries such as HathiTrust (https://www.hathitrust.org). The reports and other documents found in these collections offered insights into the role of supranational organisations in shaping international economic agendas, the debates around social and economic development, and much more — as well as providing information from various economic missions, including those to post-war Greece, Syria, Iraq, and Zambia.

Finally, the study also performed a **series of interviews** with members of DA's interdisciplinary team, planners, economists, civil engineers and architects, some of whom spent significant parts of their professional lives abroad, although others were mostly based in Athens for shorter or longer periods of time. These interviews aimed to complement the archival study, and also to provide a better understanding of the professional climate and the socio-political contexts with which the firm was engaged.

The following oral interviews were performed with associates at DA:
Nasos Hatzopoulos, architect/planner Pallini, 18 June 2015 and 11 July 2018
Myrto Antonopoulou-Mpogdanou, architect, Palaio Faliro, 22 June 2015
Panagis Psomopoulos, architect, Athens, 26 June 2015.
Giannis Palaiokrasas, economist, Kifisia, 7 August 2015
Andreas Symeon, architect, Athens, 4 April 2016
Vasilis Nikitopoulos, civil engineer, Marousi, 23 April 2016
Miltiadis Dimoulas, civil engineer, Filothei, 13 July 2016
Efi Kalliga, architect/planner, Athens, 28 July 2016
Demetris Iatridis, social scientist, Psyhiko, 29 July 2016
Artemis Drazinou, architect, Pagkrati, 8 December 2015
Finally, a written interview with Andrew Sardanis, a government official in Zambia, was performed on 12 June 2016

Thesis outline

The main body of this thesis is organised into six chapters.

The first chapter focuses on the historical and socio-political context of post-war Greece and explores Constantinos Doxiadis' attempts to formulate Ekistics as a planning framework under State power, amidst local and international architectural debates and social, political and ideological tensions around Greece's post-war reconstruction. By focusing on the formulation of Ekistics, this chapter exposes Doxiadis' multiple intellectual influences, and especially Walter Christaller's geographical studies — an influence which was instrumental in defining Doxiadis' approach for the country's reconstruction.

The second chapter analyses Doxiadis' architectural and planning agendas, which considered rural settlements and housing reconstruction key to the country's economic recovery, modernisation and nation-building. This chapter further shows that Doxiadis' territorial and architectural strategies for rural settlements, were linked to previous legacies of rural planning in the country, and aligned with economic and geopolitical priorities set by the American missions, against the backdrop of the Greek Civil War.

The third chapter follows Doxiadis' move from the national to the international scene; from Greece, to Southeast Asia and the Middle East. This move, the chapter shows, signalled Doxiadis' participation in transnational planning and architecture networks, which acquired a critical role in changing the scale and scope of development agendas in keeping with the particularities of the non-industrialised world. This chapter focuses on Doxiadis' and Doxiadis Associates' spatial visions for a rural planning project in Iraq, revealing not only modern architecture's attention to the local, but also how it accommodated existing land use patterns, access to natural resources, while promoting the shaping of interconnected communities.

The fourth chapter explores how Doxiadis' and Doxiadis Associates' visions for a progressively interconnected world became the basis for re-formulating Ekistics into a 'scientific' field and transnational practice, addressing a range of scales from the local to the planetary. The

chapter further shows that Ekistics' rescaling responded to the Ecumenopolis project, as also (after the Delos Symposia) to the international meetings among scientists and architects/planners which introduced economic, social, cultural and ecological considerations into spatial development.

The fifth chapter analyses Doxiadis Associates' engagement with 1960s Africa in the midst of intense decolonisation processes and explores the complexities of rural development agendas in sub-Saharan Africa. It deals with how these were framed by decolonization and nation-building visions, economic planning theories and colonial agrarian legacies, focusing on Doxiadis Associates' plans for rural settlements in post-independence Zambia — a key, though unrealized, project for the country's development and nation-building efforts in the mid-1960s. The chapter finally shows how Doxiadis Associates' projects in Sub-Saharan Africa informed Doxiadis' research activities into the late 1960s.

The seventh concluding chapter presents the main research findings and revisits key themes which emphasise this thesis' contributions and its potential for future research.

1 Ekistics: Shaping a post-war planning discourse

1.1 Modernist debates and the birth of Ekistics

Ekistics was rooted in the circumstances of the Second World War in Greece, almost a decade before Constantinos Doxiadis first introduced it internationally as the "science of the human settlements."[95] Doxiadis began formulating it in the early 1940s while coordinating diverse intellectual and professional activities in anticipation of the country's liberation from German occupation. Upon his return from the Greek-Italian war in April 1941, he was appointed chief supervisor of the Office of Town Planning (renamed in 1943 as the Office of Town Planning Studies and Research ([Γραφείο Χωροταξικών Πολεοδομικών Μελετών και Ερευνών (ΓΧΠΜΕ)]) under the Ministry of Public Works while also assigned an unpaid position for teaching urban planning at the School of Architecture, National Technical University of Athens (NTUA).[96] From both positions, and between 1941-45, the young architect/planner was able to initiate multiple activities which encompassed educational, professional and policy circles, all focused on shaping a planning discourse linked to aspirations of national self-realization which could guide the anticipated post-war reconstruction effort. Even before making Ekistics a coherent planning framework in the mid-1940s, and whilst the country was dealing with the hardships of German military occupation,[97] Doxiadis was envisioning the coming "national revival."[98] When finally coined in 1945, after the country's liberation, Ekistics would become

95 Among the earliest accounts of Doxiadis' naming of Ekistics a science, C. Doxiadis, *Οικιστικές Μελέτες Οικιστική Ανάλυση: Οδηγίες για τη Μελέτη των Χωροταξικών των Οικιστικών και των Πολεοδομικών Προβλημάτων και για την Ανοικοδόμηση της χώρας, [Ekistics Studies Ekistic Analysis] (*Αθήνα, Υφυπουργείον Ανοικοδομήσεως, 1946); "Ανοικοδόμηση και Αρχιτέκτονες" [Reconstruction and Architects], *Ο Αρχιτέκτων* [The Architect], October 1948. Archive files 21960, Doxiadis Archives [In Greek]. See also the extensive documentation of this early formulations of Ekistics in D. Philippides, *Κωνσταντίνος Δοξιάδης. Αναφορά στον Ιππόδαμο [Constantinos Doxiadis. Reference to Hippodamos] (*Athens, Melissa, 2015), p. 225.

96 In both positions Doxiadis was in close collaboration with the older generation planner Anargyros Dimitrakopoulos (1885-1966) who was at the time the General Secretary of the Ministry of Public Works and professor of urban planning in the School of Architecture since 1939. In 1946, Dimitrakopoulos left his post as Minister of Public Works to become member of the parliament. See A. Gerolympos, *Ανάργυρος Δημητρακόπουλος – Πολεοδομικος σχεδιασμός ως ιδεολογία [Anargyros Dimitrakopoulos - Town planning as ideology]* (Conference proceedings 170 year NTUA, the Engineers and Technology in Greece, NTUA, 2012), pp. 149-169.

97 Greece resisted Italy's invasion which began on 28 October 1940. The German occupation started in April 1941. After the fall of Crete in June 1941, the German and Italian military governments controlled most of the country. Northeastern Greece was under Bulgarian rule.

98 C. Doxiadis*, Χωροταξία – Πολεοδομία – Αρχιτεκτονική: Δελτίον "Κύκλου Τεχνικών*", 1942, Τεύχος 1.

Doxiadis' vehicle for becoming actively involved in the Greek reconstruction program and his guiding vision for addressing the challenges related to what was expected to be an unprecedented mobilization of the country's resources, both natural and human.

Doxiadis' post-war aspiration was of a coordinated effort among architects and engineers, which he promoted by establishing platforms of knowledge-exchange among young and like-minded groups of architects and by actively engaging larger audiences of the technical world. Manifesting his drive and ambition to claim a key role in the reconstruction efforts, he coordinated the so-called "Circle of Technicians" a think-tank which brought together young architects, engineers and a few non-technicians whom Doxiadis described "as workers for the Greek future."[99] This group's contemplations, including many of Doxiadis' own, exemplified also some of the premises upon which the Reconstruction was promoted — under Doxiadis' coordination — a few years later. These meetings fostered an inter-disciplinary attitude, cross-cultural comparative analyses and the systematic collection of data, by discussing housing policies in European countries, aerial photography and its role in planning, the significance of social statistics, the economic aspects of regional planning, and more.

Doxiadis illustrated this approach while at the Ministry of Public Works, where he coordinated the systematic collection, processing and visualisation of nation-wide statistics on war damage.[100] The knowledge amassed in these studies supported the country's negotiations for post-war relief,[101] and secured for Doxiadis a prominent position among local experts as well as a seat in international forums focusing on post-war reconstruction. Acting as head of the Greek delegation at the United Nations Conference on International Organization (UNCIO), held in San Francisco in June 1945, he promoted the country's substantial claims for war

99 Most of the participants in the Circle of Technicians were Doxiadis collaborators in the Office of Town Planning Studies and Research, such as J. Papaioannou, A. Dimitrakopoulos, V. Vafiadis, G. Valatas, P. Vasiliadis, and more, while others were prominent architects, such as K. Krantonellis, P. Mylonas, A. Konstantinidis. Among the non-engineers were the folklorists A. Chatzimichali, G. Megas and philologists, M. Triantafyllidis, K. A. Trypanis.

100 Architect-students Nasos Hadjopoulos and Orestis Yakas, who later made a career in Doxiadis Associates, also participated in Doxiadis' researches.

101 During the war, Greece was seeking help for post-war relief and assistance from UK and USA and had joined the Interallied Bureau of Postwar Requirements (IBPR) established in Britain in 1941, and the United Nations Relief and Rehabilitation Administration (UNRRA), established in 1943. See G. Politakis, *The Post-War Reconstruction of Greece: A History of Economic Stabilization and Development*, *1944-1952* (New York, Palgrave Macmillan, 2018), pp. 39-45.

reparations and relief based on extensive documentation and visualisation.[102] He would use the international publicity to speak not only as a technocrat but also as an anti-Nazi resistance hero. By unveiling himself as "a leading member of an underground organization the aim of which was to foil in every possible way the satanic axis plan for the extermination of the Greek people"[103] he appeared to be speaking on behalf of Greek society, promoting the moral right to be compensated for their sacrifices against the common enemy.[104] However, Doxiadis became critical of the UN as his efforts to introduce housing and planning as the key to post-war reconstruction within the UN's international agendas fell short, and he became even more convinced of the urgent need to coordinate on a national level.[105]

If Doxiadis' technocratic vision for the country's post-war reconstruction relied on collaboration among architects, engineers and other experts, it was also predicated on an increased role for the central State and the creation of governmental bodies of indisputable authority. In this respect, Doxiadis saw the anticipated reconstruction as an opportunity to restore state-building processes that had been interrupted by the war and to support the State's planning apparatuses aligning Greece to the institutional framework of central European countries. Doxiadis was inspired by the widespread transformations, which accelerated in the aftermath of the 1929 crisis and were embraced by liberal and fascist governments, whereby the nation's 'well-being' was bound up with institutional methods of managing the human population and national economy. Around this time, architects also turned their attention to using social statistics (e.g. Le Corbusier, "Statistics is indispensable";

102 See A. Kyrtsis, *Constantinos A. Doxiadis: Texts, Design, Drawings, Settlements* (Athens, Ikaros, 2006), p. 344.

103 According to Theodosis, "Doxiadis was Director in Athens of the British Intelligence Unit MO4, chief of the national resistance Group "Hephaestus" (1941 - 1945), and was honoured as Member of the Order of the British Empire." See L. Theodosis, *Victory over Chaos? Constantinos A. Doxiadis and Ekistics 1945-1975* (PhD dissertation, Universitat Politècnica de Catalunya. Departament de Teoria i Història de l'Arquitectura i Tècniques de la Comunicació, 2016),p.18 fn.15.

104 Doxiadis also stated in the same speech, "Greece resembles today a soldier who returns to the peaceful pursuit of life, weary and seriously wounded, after having fought in the front-line for five years." Archive files 21957, Doxiadis Archives.

105 See also P. Pyla, "Architects as Development Experts. Model Communities in Iraq and Syria", in P. Pyla, ed., *Landscapes of Development: The Impact of Modernisation Discourses on the Physical Environment of the Eastern Mediterranean* (Cambridge, Harvard University Aga Khan Program, 2013), p. 167.

CIAM's Committee of Statistics[106]) as a way of reaffirming architecture's role in public affairs amidst the growing importance of economic and other social sciences.

Enhancing the State's planning capacities entailed adapting architecture and planning to novel understandings of spatial and settlement planning aimed at promoting land use and physical planning as crucial mechanisms of the central State.[107] In 1942, he had introduced the term "Χωροταξία [Chorotaxia]" as a translation of the German term "Raumordnung" in order to coin a Greek word for sregional planning.[108] "Chorotaxia" derived from "choros" (space) and "taxi" (order/arrangement) and meant for Doxiadis the planned distribution of development projects on all scales. Although Doxiadis introduced the term at a time when regional planning hardly constituted a distinct scientific and academic field, it becomes evident that by using this term he most probably referred to various possible geographic scales of planning intervention, while at the same time he was addressing specific notions on

106 About Doxiadis' influence from the visualization methods used by Otto Neurath who had presented in 1933-CIAM in Athens, see K. Tsiambaos, "Isotype Diagrams from Neurath to Doxiadis", *Architectural Research Quarterly*, 16, 1, (2012), pp. 49–57

107 This thesis uses the contemporary term "spatial planning" in order to refer to the different scales of planning from the urban/settlement level to the regional level. Over the last decades, the term "spatial planning" tends to establish itself in planning debates (at least in a European context while also in Greece), as encompassing the different scales and levels of planning, while incorporating the notion of "space" as a complex term that takes into consideration a multiplicity of dimensions (physical, social, economic, political, cultural, environmental) and their interconnections. It is also a term that has been used on a European context to overcome the different terminologies used in different planning traditions and cultures (e.g. Stadtebau, town planning, urbanisme, aménagement du territoire etc.). See P. Newman and A. Thornley, *Urban Planning in Europe: International Competition, National Systems and Planning Projects* (London, Routledge, 1996); and European Commission, *The European Union Compendium of Spatial Planning Systems and Policies* (Luxemburg, Office for Official Publications of the European Communities, 1997).

108 See C. Doxiadis, Η σύγχρονη Κρατική Χωροταξία [The contermporary (State) Regional Planning], *Χωροταξία – Πολεοδομία – Αρχιτεκτονική: Δελτίον "Κύκλου Τεχνικών*", 1943, 1-5, and C. Doxiadis, Περί της Χωροταξίας [On Regional Planning], *Τεχνικά Χρονικά,* 20-21, pp. 241-244, Athens 1942, [1]-12. This thesis translates the term "Χωροταξία" coined by C. Doxiadis as "regional planning". According to planning theory "regional planning" is the planned transformation of a socio-economic geographic area, expressing the goals of an organized society. The objective of regional planning is the organization of human activities on a regional space, wider than the level of a settlement or a city, while this relates to the distribution and allocation in space of people in relation to economic and productive activities, social technical infrastructures, natural and energy assets and so on. In a Greek context, the term "Χωροταξία" has been used both to refer to regional planning (connected to the administrative organisation of the national territory) but also to encompass the different levels and scales of planning, from urban to regional (what tends to be replaced by the notion of "spatial planning". As can be noted, the theory and practice of regional planning has also a powerful French tradition. The term "aménagement du territoire" was introduced in the post-war period in France, connected to the notions of national territory, administrative decentralization and regional economic development. See also: L. Vassenhoven, *Regional Planning, Teaching manual* (Athens, NTUA, School of Architecture, 2004) and A. Faludi, "Territorial Cohesion: Old (French) Wine in New Bottles?", *Urban Studies*, 41, 7, (2004), pp. 1349-1365.

the wider-scale, regional organization of population and activities in relation to socio-economic development, productive activities and infrastructures. In doing so, he consciously attempted to go beyond a fragmentary understanding of the built environment. He criticized the narrow approaches exhibited thus far by engineers and architects which understood the built environment either as a purely techno-scientific construct or as an assortment of aesthetically produced buildings. Instead, he presented cities as complex assemblages of buildings, infrastructure and public spaces whose primary goal was "to support the life of their inhabitants,"[109] aiming to turn attention to their inherent complexity and the need for a different conceptualisation of settlements.

In a way, Doxiadis' critical remarks were aligned to a reconsideration, by some of the key protagonists, of the legacy of the pre-war Congrès Internationaux d'Architecture Moderne (CIAM) then underway.[110] Publications, such as Jose Luis Sert's 1942-*Can our Cities Survive?*; Siegfried Giedion's 1941-*Space, Time and Architecture*, and Le Corbusier's, 1943-*La Charte d' Athenes*, offered different understandings of the discussions that took place at the fourth CIAM conference in 1933 that had decisively turned modernist architects attention to urban problems.[111] Le Corbusier's book eventually became the canonical text which overshadowed alternative interpretations and overemphasized the importance of the four distinct 'functions'—housing, work, transportation and recreation—in the perception, analysis and planning of the city. Under this approach, CIAM's architects saw an opportunity to promote modernist planning in the reconstruction of European cities as well as large-scale urban planning projects in European colonies.[112] While never actively involved in the CIAM and their debates, Doxiadis' writings, at the time, imply a move from a strictly functionalist view of

109 C. Doxiadis, Περί της Χωροταξίας [On Regional Planning], *Τεχνικά Χρονικά,* 20-21, 241-244, Athens 1942, [1]-12.

110 CIAM was initiated in June 1928 by a group of European architects aiming to shape and propagate a program for modern architecture.

111 For discussions within CIAM see, A. Pedret, *Team 10: an Archival History: Modernizing Modern Architecture, 1947-1962* (London, Routledge, 2011); E. Mumford, *Defining Urban Design: CIAM Architects and the Formation of a Discipline, 1937-69* (New Haven, Yale University Press, 2009); E. Mumford, *The CIAM Discourse on Urbanism, 1928-1960* (Cambridge, Massachusetts, MIT Press, 2000); A. Pedret, *CIAM and the Emergence of Team 10 Thinking, 1945-1959* (PhD dissertation, Massachusetts Institute of Technology, 2001).

112 See for example, Á. Moravánszky and J. Hopfengärtner, eds., *Re-Humanizing Architecture: New Forms of Community, 1950-1970* (Berlin, Boston, De Gruyter, 2016); T. Avermaete, S. Karakayali, and M. Von Osten, eds., *Colonial Modern: Aesthetics of the Past-Rebellions for the Future* (London, Black Dog, 2010).

urban planning towards a planning approach that not only claimed to be more 'holistic' but also considered social responsibilities. Doxiadis' approach could be seen as rejecting the strict rationalism of modern architecture that was also underway within CIAM.

These reactions within CIAM took different forms: Some pushed towards overcoming the narrow perception of modernism as an aesthetic reaction to historical and traditional forms and explored ways to reconnect modern architecture with social needs in their various regional/local expressions.[113] As the values of technical rationalism had been undermined during the war, being associated also to fascism, others emphasized human/social values and tied architecture to a vision of community which became particularly important for the post-war planning of urban/rural settlements. In these circumstances, CIAM would reconsider functionalism making connections to organicist discourses. One would be the American critic Lewis Mumford who saw the "organic" as the opposite of the "mechanic," which he associated with standardisation and uniformity (found in capitalism and industrialisation) that he saw as destabilizing forces of the totality of life.[114] Mumford developed his organicism through his exchanges with the Scottish biologist and planner, Patrick Geddes, whose emphasis in cities as dynamic phenomena comprised of socioeconomic activities and environmental forces, and his regional and urban planning experiments became a major influence in British planners. His effect in CIAM discourses would also come through Jaqueline Tyrwhitt's presence in the post-war meetings.[115] Tyrwhitt had reprinted Geddes' texts disseminating his work in India in the 1920s focusing on his efforts to form "balanced communities."[116] Although Doxiadis was aware of these architectural discussions, he did not participate in CIAM debates. Instead he initiated an unofficial dialogue with Ioannis

113 See for example the case of Swiss architect Afred Roth in A. Pedret, *CIAM and the Emergence of Team 10 Thinking, 1945-1959* (PhD dissertation, Massachusetts Institute of Technology, 2001), p. 41.

114 See L. Mumford, *The Culture of Cities* (New York, Harcourt, Brace and Co, 1938).

115 Jaqueline Tyrwhitt was born in South Africa in 1905 and studied architecture in Architectural Association in London in 1924. She joined CIAM after the war and became involved in the organisation of the 1947 conference in London. For the links between Tyrwhitt and Geddes see E. Shoshkes, "Jaqueline Tyrwhitt Translates Patrick Geddes for Post World War Two Planning", *Landscape and Urban Planning*, 166, (2017), pp. 15-24.

116 See J. Tyrwhitt, *Geddes in India (*London, Lund Humphries, 1947).

Despotopoulos, among the key Greek members of CIAM and also an advocate for an organicist approach in planning.[117]

Despotopoulos, a Bauhaus student and active member of the Greek team which organised the 1933-conference in Athens, made attempts to introduce an alternative concept of planning, explicitly through a socialist vision.[118] His expressed his views around the 1933 conference, arguing for an organicist rather than a functionalist conception of the city, expressing both a call for a holistic architectural approach of the material and spiritual dimensions of cities and a collectivist vision.[119] Like Doxiadis, Despotopoulos was influenced by German planning culture and could be considered among the alternative trajectories of inter-war modernist planning expressed especially by German-influenced architects in South-eastern Europe and Jewish émigrés in Palestine.[120] They both spoke of a needed shift from the scale of urban planning interventions to regional planning even on national scale.[121] However, in his effort to introduce spatial planning as the "ordering/organisation of space" Doxiadis explicitly rejected the use of "Χωροδομία" (Landesbau), a term used by Despotopoulos in 1933, implying that it was related to an architectural approach to "the shaping of space."[122] Although both architects' planning visions presupposed a key role for the State and the mobilization of the technical world to promote large-scale transformation,

117 Despotopoulos and Doxiadis both applied for a teaching position in the School of Architecture in 1941 for teaching architectural design. The position was eventually offered to Despotopoulos. Doxiadis' commitment to regional and urban planning and his younger age played a role in the decision. Archive files 24343, Doxiadis Archives.

118 See more on Despotopoulos, L. Dema, *Οργανική Πόλη και Καθολικό Πνεύμα: Διδασκαλία και Έργο του Ιωάννη Δεσποτόπουλου [Organic City and Universal Spirit: Teaching and Work of Ioannis Despotopoulos*], (PhD dissertation, School of Architecture, NTUA, Athens, 2015); T. Andrianopoulos, "The Athens Charter II: A Dialectic Grid", in A. Tostões and Z. Ferreira, eds., *Adaptive Reuse - The Modern Movement Towards the Future* (Fourteenth International Docomomo Conference, Lisbon, Docomomo International, Casa da Arquitectura, 2016), pp. 757-763.

119 Despotopoulos' views echoed other Germans architects like F. Forbat. Η Οργανική Πόλις [The Organic City], *Τεχνικά Χρονικά*, 38, (15 July 1933), pp. 694-703. See L. Dema, "Η 'Οργανική Πόλις' του 4ου CIAM και ο Ιωάννης Δεσποτόπουλος" [The Organic City of the 4th CIAM and Ioannis Despotopoulos] in A. Giakoumatos, ed., *Greek Architecture at the 20th and 21th century: History, Theory, Critic, (*Αθήνα, Gutenberg, 2017), pp. 73-85.

120 J. Dostalík, "The Organicists: Planners, Planning, and the Environment in Czechoslovakia (1914–1949)" *Planning Perspectives* 32, 2, (2017), pp. 147-173; S. Wilkof, "New Towns, New Nation: Europe and the Emergence of Zionist-Isreali National Planning Between the Wars", in H.Miller and H.Porfyriou, eds., *Planting New Towns in Europe in the Interwar Years: Experiments and Dreams for Future Societies*, (Newcastle upon Tyne, UK, Cambridge Scholars Publishing, 2016), pp. 195-229.

121 See I. Despotopoulos, Πολεοδομική [Urbanisme], *Τεχνικά Χρονικά*, 2, 4, 39, Athens 1933, 756 - 773, 796 - 797.

122 C. Doxiadis, Περί της Χωροταξίας [On Regional Planning], *Τεχνικά Χρονικά,* 20-21, 241-244, Athens 1942, p.1.

ideological tensions in Greece between left and right, during and after the war, made such convergence difficult.

Eventually, the unofficial dialogue between the two architects was extended over the more urgent reconstruction problems of Greece. Despotopoulos was a founding member of the group "Επιστήμη Ανοικοδόμηση (ΕΠ-ΑΝ) [Science – Reconstruction]."[123] He saw reconstruction as an opportunity to promote new forms of social organisation and production,[124] and would later advocate for the development of heavy industry in Greece on the Soviet model. Doxiadis publicly refuted the campaigns for war relief and reconstruction coming from the Left. In a series of articles in the daily press, he linked several forest fires to "sabotage" of the temporary housing program which relied on extracting wood from local forests. Expressing contempt for socialist-inspired approaches, he underlined that the villagers "are taught to react based on a promise that ANOTHER SOCIAL REGIME WILL BUILD THEM BETTER HOMES" (Doxiadis' emphasis).[125] Doxiadis' sarcasm exposed the ideological tensions echoed in professional and architectural visions for the country's reconstruction. By attacking certain ideological positions, and concealing his own, Doxiadis would repeat his conviction that reconstruction required coordination by a State agency of indisputable authority, which also meant: one not questioning the country's geopolitical position. In this light, Doxiadis was also moving away from the figure of the modernist architect-hero that CIAM was based upon. Even if CIAM had offered a unique platform for collaborative, cross-cultural, transnational exchanges that disseminated modernist ideas across the world, its agendas continued to be shaped by architectural priorities and the dominating figure of the architect. Seeing that model of architecture as inefficient to respond to the priorities of post-war times, Doxiadis would put his faith in another figure: that of the technocrat and manager of a central, presumably apolitical, State agency.[126]

123 Other key members were Nikos Kitsikis, civil engineer and president of Technical Chamber of Greece and the lawyer/ economist Demetris Mpatsis. The group published the magazine Ανταίος [Antaios].

124 Despotopoulos published articles on the reconstruction, temporary housing and planning in the leftist magazine Antaios [Ανταίος] in 1945-1946. See L. Dema, *Οργανική Πόλη και Καθολικό Πνεύμα: Διδασκαλία και Έργο του Ιωάννη Δεσποτόπουλου [Organic City and Universal Spirit: Teaching and Work of Ioannis Despotopoulos*], (PhD dissertation, School of Architecture, NTUA, Athens, 2015), p. 191.

125 C. Doxiadis, Η Προσωρινή Στέγαση [Temporary Housing], *Το Βήμα,* 30 September 1945. Archive files 21957, Doxiadis Archives.

126 For Doxiadis' 'managerialism' see, A. Kakridis, "Rebuilding the Future: CA Doxiadis and the Greek Reconstruction Effort (1945-1950)", *The Historical Review/La Revue Historique,* 10, (2013), pp. 135-160;

1.2 Ekistics as a state-led strategy for the reconstruction

Ekistics emerged in the thick of Doxiadis' professional debates on priorities for, and ideological nuances of, the country's reconstruction, and his efforts to promote an institutional framework for the establishment of a governmental body dedicated to that end. In September, 1945, Doxiadis submitted an unofficial proposal for the creation of a "Chair of Ekistics [Έδρα Οικιστικής]"[127] at the National Technical University of Athens, where he outlined the main axes of a theoretical and policy-oriented educational program which would study settlements by considering their complex physical and socio-economic dimensions within a nation-scale approach. Associating Ekistics with the German term, "Siedlung" (Settlement), also marked an attempt by Doxiadis to go beyond the mere coordination of state planning at different levels as expressed in his 1942 article on "Chorotaxia". By conceptualizing Ekistics as a settlement policy,[128] he would qualify the idea of spatial planning as something focused on the role of settlements as a "complex national problem, connected to production, transportation, economy etc."[129] Doxiadis advocated for the need of a new technical field that would bring together research and applied policy on settlements and address Greece's reconstruction problem. This field would have three branches: (a) Ekistics geography [Οικιστική γεωγραφία] dedicated to the study of settlements, their distribution and interrelations; the socio-economic role of settlements and housing in national and regional planning; (b) Ekistics theory [Οικιστική θεωρία], dealing with sizes, types and locations of settlements in relation to social and economic conditions, and, (c) Ekistics policy [Οικιστική πολιτική] as a practice formulating housing and land policy, and technical guidelines regarding the construction of buildings.[130]

Ekistics was proposed by Doxiadis as a key component of a complex web of state-led policies and a distinct planning process directly linked to the national economy.[131] This direct connection prioritized settlement planning/reconstruction over other state-led policies.

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and P. Pyla, *Ekistics, Architecture and Environmental Politics, 1945-1976: A Prehistory of Sustainable Development,* (PhD dissertation, Massachusetts Institute of Technology, 2002).

127 See Archive files 23929, Doxiadis Archives.

128 The etymology of Ekistics, according to Doxiadis comes from the noun *οίκος* and the verb *οικώ*, which means settling down. See "Glossary of Terms" in C. Doxiadis, *Ekistics: An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p. 516.

129 See Archive files 23929, Doxiadis Archives.

130 See Archive files 23929, Doxiadis Archives.

131 See notes and sketch diagrams in, Archive files 23735, Doxiadis Archives.

Mediated by "Standort" [location], a term coming from the German location theory –analysed below— he expressed an early attempt to emphasize spatial perspectives in economic programming. The erasing of the word "policy", in Doxiadis' diagrammatic approach, expressed also his ambivalence over what could be seen both as the framework of a state-led settlement policy and the outline of a universal meta-theory on settlements. **(Fig. 1.1)**

At this time, he was not only trying to claim a knowledge regime regarding settlement planning, but he also aspired to bring it under State control. Ekistics was shaped in parallel to preparations for the establishment of the Undersecretary's Office for Reconstruction (Υφυπουργείο Ανοικοδόμησης) (under the Ministry of Public Works) which was assigned to Doxiadis, in December 1945.[132] The law establishing the Office emerged out of the Ekistics agenda and made a responsibility of this new governmental body:

> […] the entire ekistics problem of the country, that is the research and the study of settlements; the formulation and implementation of the entire state ekistics policy; in combination with the broader economic and social reconstruction policy; the study and implementation of a source funding program, and the development of technical staff, the supply or production of required construction material and the study and planning of settlements.[133]

Using the resources, the team, and the extensive knowledge on the condition of Greek settlements, produced between 1941-44, Doxiadis would zealously promote a series of theoretical studies whose goal was to apply Ekistics framework and make even more explicit the significance of settlement policy in the country's reconstruction. These studies published

132 The Ministry for Reconstruction was established by the liberal Sofoulis government in December 1945 concentrating administrative powers from the Ministries of Public Works, Social Welfare and Agriculture dealing with housing issues. It would take a year and another law for the new Ministry to become effective while its powers would be revised and extended over time. See more details in, P.M. Deladetsimas, "Το Υφυπουργείο Ανοικοδόμησης: Κρατικοπαρεμβατικες Προθέσεις και το Συγκρουσιακό Πλαίσιο της Περιόδου Ανασυγκρότησης (1945-1951) [The Ministry of Reconstruction: State Interventionist Intentions and the Contested Environment of the Reconstruction Period]", in *Urbanism in Greece: from 1949 to 1974* (Proceedings [of the] 2nd Conference of the Society of History of City and Urban Planning, Volos, University of Thessaly Press, 2000).

133 Author's translation. See Υφυπουργείον Ανοικοδομήσεως - Διεύθυνσις Αγροτικών Κατασκευών, *Πρόγραμμα και Κανονισμοί Έργων Ανοικοδομήσεως [Programme and Regulations for Reconstruction Projects]*, Αθήνα: Υφυπουργείον Ανοικοδομήσεως, 1946, 17.

between 1946-49, trace the various threads of theoretical and institutional transformation that informed the formulation of Ekistics by Doxiadis.

A first thread highlights Ekistics' close ties to the institutionalisation of various techniques and methods that would allow centralized states to secure control over the national economy. According to Mitchell, these methods can be traced back to the prevailing logic of the economy in terms of monetary circulation[134] and the rise of national accounting and macroeconomic modelling as key to implementing Keynesian interventionist policies that would "manage the contradictions of capitalism to the benefit of the nation and its least well-off citizens."[135] In this context, Doxiadis' Ekistics can be understood as a parallel quest to chart a crucial field of state intervention by connecting economic control and welfare policies with housing and settlement planning. Relying heavily on demographic, social, and economic data, Doxiadis' presented spatial planning, housing and settlements as crucial fields of state intervention.[136] His effort, and thus, Ekistics was also in tune with the emergence of national and international institutions that were established after the Bretton Woods agreement in 1944, and United Nations agencies established in 1945, which promoted economic policies in the name of international political and economic stability. Under this pervasive economic logic, the shaping of the built environment would be subjected to multiple abstractions, calculations and new forms of representation. Relying on the use of extensive data to calculate the impact of settlement and housing policies on the economics of reconstruction, Doxiadis would often resort to statistics as objective statements as a strategy to claim a

134 According to Mitchell the logic of economy as monetary circulation related to the control of the market prevailed over earlier understandings of economy as a management of scarce resources and materials. See T. Mitchell, *Carbon Democracy: Political Power in the Age of Oil,* (London, Verso, 2011), p. 132. See also and A. Desrosières, "Managing the Economy", in T. Porter and D. Ross D., eds., *The Cambridge History of Science: The Modern Social Sciences (Volume 7)* (Cambridge, Cambridge University Press, 2003), p. 553-563.

135 See D. Gregory et.al, ed., *The dictionary of Human Geography*, 5th ed., (Malden MA, Wiley-Blackwell, 2009), p. 548.

136 Ekistics can be understood in connection to the broader post-war policies that introduced regional and spatial perspective in welfare policies that have been termed in bibliography as "spatial Keynesianism." For an analysis of the term see N. Brenner, "Urban Governance and the Nationalization of State Space: Political Geographies of Spatial Keynesianism" in *New State Spaces: Urban Governance and the Rescaling of Statehood* (Oxford, Oxford University Press, 2015), p. 114-172.

central role within political discussions and negotiations among international and local actors.[137]

A second thread found in these studies, exposed Ekistics' ties to geographical-regional planning. This approach was promoted by Doxiadis as an important institutional reform in response to the country's reconstruction project, which he also saw as a vehicle for the country's socio-economic modernization. He drew on the inter-war political processes undertaken in Germany and Britain which focused on regions as important administrative units.[138] This was also inspired by theoretical advances in economic geography, especially by German location theorists who introduced spatial perspectives in the analysis of the countryside and the interrelation of urban and rural settlements.[139] Through a regional planning approach, Doxiadis cast light on rural settlements not only to promote economic and welfare policies in the war-torn countryside, but also to facilitate the reshaping of social and administrative structures at the regional and national levels. The reconstruction of networks of settlements in the countryside was considered crucial also for stabilising human geographies upon which economic and social reproduction could be planned in the name of "increase[ing] the living standard of the people."[140] In these terms, regional planning was important to Doxiadis in framing the nation through geographical vision and in turn for conceiving planning as an instrument for socio-political transformation and administrative control. In recognizing the management of the countryside as the crucial field for establishing Greece's post-war economic and territorial sovereignty, Doxiadis anticipated the importance of rural areas for the Reconstruction and the Civil War.

A last thread shows Ekistics' loose connections to other epistemologies related to the study of human-environment relationships. Ekistics exposed Doxiadis' preoccupation with

137 Doxiadis tried to prove the validity of his arguments and his methods to Greek economists, engineers, architects, and foreign mission experts. See especially A. Kakridis, "Rebuilding the Future: CA Doxiadis and the Greek Reconstruction Effort (1945-1950)", *The Historical Review/La Revue Historique,* 10, (2013), pp. 135-160; and D. Philippides, *Κωνσταντίνος Δοξιάδης. Αναφορά στον Ιππόδαμο [Constantinos Doxiadis. Reference to Hippodamos]* (Athens, Melissa, 2015).

138 See R.E. Dickinson, *The Regions of Germany* (Oxford, Oxford University Press, 1945).

139 See Doxiadis' reading notes in, Archive files 23735, Doxiadis Archives.

140 "We have two ways to raise the living standard of our people, fistly to expand the sources of wealth and then to improve the Country's organisation." In this study, Doxiadis develops his views on the reorganisation of the country. See C. Doxiadis, *Η Διοικητική Αναδιοργάνωση της Χώρας* [*The Administrative Reorganisation of the Country],* Σειρά εκδόσεων του Υπουργείου Ανοικοδομήσεως, 13, Αθήνα: Υπουργείο Ανοικοδομήσεως, 1948, ια.

settlements as social, economic, physical and cultural environments existing in a dynamic relationship with human populations. Similar to this approach was the loosely defined field of "human ecology" a concept introduced in the 1920s to describe a field of geographic and sociological inquiries that applied biological metaphors to the study of social phenomena.[141] Even if Doxiadis does not refer to human ecology explicitly, his planning approach was largely informed by organicist metaphors, as we will discuss below, while he understood settlements as a critical index of the quality of human life.

In this respect, Doxiadis approach was framed by a constant move between a systematic effort to identify and document the interrelations between human population and space and the respect for the free-flowing, interconnected and unmeasurable totality of life/reality. This tension between something which can be measured and modelled and something fleeting and unmeasurable, made Doxiadis' approach susceptible to the use of 'biological' concepts of change, development, adaptation, adjustment, or balance, often evoked through a managerialist and technocratic perspective. It also guided his future efforts to shape even more systematic and, presumably, comprehensive analyses of the dynamic population-environment relationship (See Chapter 4). Within this framework, Doxiadis would not only conceive networks of settlements as a manifestation of the interconnectedness of the human population that transcends administrative boundaries, but he also contemplated the close connection between social, cultural and economic activities as an expression of community ties. In this respect, human settlements were conceived as spatial phenomena complexly shaped by local and international forces. Understanding and planning them would entail an empirical and contextual approach to complement the abstractions of statistical measurements.

The above threads are interwoven into Doxiadis' Ekistics and speak not only to his vision for Greek reconstruction but also to his future endeavours in a transnational context. Before we consider the Reconstruction project more closely, where Ekistics would be tested for the first time, let us turn to some of Doxiadis' key theoretical influences that may shed more light on some assumptions which inform Ekistics' (presumed) coherence.

141 For the definitions of human ecology see, R. J. Lawrence, "Human Ecology and its Applications", *Landscape and Urban Planning*, 65, (2003), pp. 31–40.

1.3 Spatio-economic priorities: Drawing on Christaller's economic geography

Doxiadis saw the broader project of Reconstruction as a transformative process for the modernisation of the country based on the territorial realignment of human population, settlements and administrative structures. Taking for granted the idea of the central State as the main agent to plan and oversee this transformation Doxiadis shaped Ekistics as an essential part of the state machinery responsible for guiding this transformation. Central to this understanding of Ekistics was the interconnected nature of settlements, a principle that reinforced Doxiadis' regional planning approach which relied on organicist metaphors. This understanding, this thesis shows, was much influenced by Walter Christaller's economic-geographic theory and the German school of location theory,[142] which led Doxiadis to emphasize economic factors in the geographical distribution of human settlements.[143]

In drawing on these studies, Doxiadis would also adopt their key assumptions: the rational choice subject and the maximizing behaviour, which were also the core of neoclassical economic theories. Weber's location analysis of industries or Christaller's Central Place Theory (CPT) presumed the maximising behaviour of rational subjects whose goal was to "obtain the most for the least, and applying both to consumers who maximize utility, and producers who maximize profits."[144] 'Rational' behaviour was also assumed to apply to the distribution of institutions, firms and other social actors and thus the aggregate result of rationally behaving individuals and firms tended to a state of equilibrium and optimal allocation of resources. Essential to achieving such conditions was the functioning of a competitive market. In turn, corrective measures would be required if market competition collapsed, to restore what was seen as a 'natural' order.

The German location school transferred economic theories into spatial disciplines and Doxiadis adopted these assumptions to shape Ekistics. By relying on quantitative methods

142 Doxaidis' notes indicate extensive reading of location studies, not only by Christaller but also von Thunen's 1826 treatise *The isolated state* (*Der isoliert Setaat*); Alfred Weber's study on the distribution of industrial centers in the 1910s as well as August Losch's study of *The Economics of Locations* in the 1940s, who like Christaller, premised their analysis on complex mathematical and geometrical models. Archive files 23735, Doxiadis Archives.

143 For the history of 'location analysis' and its influence on the development of spatial sciences see, T. J. Barnes, "The Place of Locational Analysis: A Selective and Interpretive History", *Progress in Human Geography,* 27, 1, (2003), pp. 69-95.

144 D. Gregory et.al (ed.) *The Dictionary of Human Geography*, 5th ed., (Malden MA, Wiley-Blackwell, 2009), p. 497.

and spatial perspectives to analyse economic, geographical and planning issues, he formed a version of "regional science" even before this term was coined in the 1950s.[145] In highlighting settlements' interconnections, their central role in economy and social life, and their hierarchy, Doxiadis drew inspiration from Christaller.[146]

While working on his doctoral thesis, Christaller investigated the "special economic geographic laws" that explain "the sizes, number, and distribution of towns."[147] Following the principles of neoclassical economics theory, such as the competitive market, rational choice subject (customers/suppliers) and the equilibrium condition, while offering empirical verifications from Southern Germany, Christaller suggested that the market and other services position themselves in central locations so as to offer services to the largest possible number of people/clients in the surrounding area. He explained that, if various factors remain stable (e.g., population size, income and purchase power, demand and profit levels, shopping behaviour), eventually these central locations will reach an equilibrium where individual suppliers or an aggregate economic activity (central place) eventually serve an equal area and number of customers. Gradually more specialised services will emerge creating central places of higher levels with a wider area and population influence. Eventually, this process creates a hierarchical network of interconnected "central places", which, in ideal conditions, follows a hexagonal spatial pattern which was a key component of the so called Central Place Theory (CPT).[148] **(Fig. 1.2)**

At the end of the 1930s, Christaller used his deductive theory as a theoretical norm against which actual settlement patterns could be measured and potentially optimised.[149] Assuming

145 The field of regional science is attributed to the American economist Walter Isard See, D. Boyc, " A Short History of the Field of Regional Science", *Papers in Regional Science*, 83, 1, (2003), pp. 31–57.

146 See an extensive analysis of Christaller's work. K. Kegler, *Deutsche Raumplanung: Das Modell Der "zentralen Orte" Zwischen Ns-Staat Und Bundesrepublik* (Paderborn, Ferdinand Schöningh, 2015).

147 Walter Christaller central place theory draws from his doctoral dissertation titled "Central Places in Southern Germany" that he completed in 1932 at the Department of Geography, University of Erlangen. See W. Christaller, *Die zentralen Orte in Suddeutschland* (Jena, Gustav Fischer, 1933) and W. Christaller, *Central Places in Southern Germany*, trans. C. W. Baskin, (Prentice-Hall, 1966).

148 The assumption made in Christaller's theory was that the central functions (services), "fall into groups of classes" and that these were associated to "classes of central places" which are of seven levels ranging from the "level of hamlet to world-city" B. Berry, A. Pred and W. Christaller, *Central Place Studies* (Philadelphia, Regional Science Research Institute, 15, 1961).

149 In 1941 Edward Ulman introduced Walter Christaller 1933's study on central places to an English-speaking audience for the first time, he insightfully highlighted its limitations but also stressed its potential as "a theoretical norm from which deviations may be measured' but also '[as] an aid in planning the

the rationality of the initial theory, Christaller thought it was possible to translate the theoretical model into a spatial tool and to 'engineer' an otherwise complex socio-spatial process by developing a number of centres, while programming their hierarchy and the distribution of the human population across an evenly divided territory. These 'dark' capacities of Christaller's theory became explicit during the war when he offered his work as theoretical support for the imperialist visions of the Nazis.[150] Between 1940 and 1944, Christaller conducted research for government agencies[151] associated with the head office of Planning and Soil, exploring administrative and regional planning frameworks in relation to the Generalplan Ost (General Plan for the East) when he stated:

> We have to create totally new units planned on the basis of knowledge of spatial laws, with the goal being to create viable German spatial communities in the East […] This is especially the case for the complementary cultural and market regions of central places of every rank, but mainly for the smallest units (main-villages or Hauptdörfer) [...] Our task will be to create in a short time all the spatial units, large and small, that normally develop slowly by themselves (often with unwanted results), so that they will be functioning as vital parts of the German Empire as soon as possible.[152]

By following the spatial patterns which he extracted from his studies in Southern Germany, Christaller believed he could "fast-track" the creation of administrative, economic and spatial patterns to integrate conquered areas into the "German Empire". Generating a symbolic geography, however, was not the only goal for Christaller who perceived his role through an

development of new areas". E. Ullman, "A Theory of Location for Cities", *American Journal of Sociology*, 46, 6 (May 1941), p. 864.

150 For example, the German ideology of the 'Lebensraum' (living space) became under Hitler the central component of the Nazis' racial and imperial visions to Germanize Eastern Europe following the military occupation of vast territories. It was translated as resettlement and administrative planning that came to be known as Generalplan Ost. See R. E. Preston, Walter Christaller's Research on Regional and Rural Development Planning during World War II. *METAR—Papers in Metropolitan Studies*, 52, Freie Universität Berlin, Institut für Geographische Wissenschaften: Gerhard O. Braun. 5, 2009.

151 For the socio-political effects of the work Christaller was involved in, see T. Barnes, ""Desk Killers": Walter Christaller, Central Place Theory, and the Nazis", in P. Meusburger, D. Gregory and L. Suarsana, *Geographies of Knowledge and Power* (Dordrecht, New York, Springer, 2015); P. Giaccaria and C. Minca, *Hitler's Geographies: The Spatialities of the Third Reich* (Chicago, London, The University of Chicago Press, 2016).

152 Cited in R. E. Preston, 'Walter Christaller's Research on Regional and Rural Development Planning during World War II.' *METAR—Papers in Metropolitan Studies*, 52, Freie Universität Berlin, Institut für Geographische Wissenschaften: Gerhard O. Braun. 5, 23, (2009).

apolitical filter.[153] Not only was he promoting regional planning as a solution to the re-settlement processes taking place during an ongoing expansionist war, but he was also advocating for the optimization and improvement "[of] impractical, outdated and arbitrary urban forms or transport networks."[154] Christaller's envisioned the shaping of a hierarchical network of "central places", by integrating existing settlements or creating new ones eventually shaping unified administrative and economic structures as the basis for fostering social unity.

It is unclear if Doxiadis had an in-depth knowledge of Christaller's wartime research when his central place theory was transformed into a regional planning tool, even if this remained a theoretical exercise that never materialized. Nonetheless, as we will see below, both Christaller and Doxiadis were involved the formulation of the planning culture in Germany before the War. In any case, in the aftermath of the Second World War, Doxiadis would avoid making explicit references to Christaller,[155] and he generally avoided mentioning the many studies he had consulted. However, his early 1940s writings suggest that he monitored planning developments closely especially in Germany, before and during the Nazis, and in Britain, where regional planning issues were directly connected to the challenges of post-war reconstruction.

1.4 Regionalism and anti-urbanism in post-war planning culture

Doxiadis completed his doctoral thesis in Berlin only three years after Christaller. Both worked within intense intellectual and political shifts taking place in Europe, during which Germany was also transformed by the rise to power of the National Socialist German Workers Party (NSDAP) in January 1933. Writers such as Carl Schmitt and Oswald Spengler among others

153 Christaller was a former socialist, and a Social Democratic Party (SPD) member before he joined the Nazi party and afterwords the Communist party. See James Scott's analysis of Christaller as a paradigmatic case exemplifying the "urban planning genius's search for the autocrat who will give him the power to realize his vision". J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Yale University Press, 1998, fn. 29), p.382.

154 Cited in see T. Barnes, ""Desk Killers": Walter Christaller, Central Place Theory, and the Nazis", in P. Meusburger, D. Gregory and L. Suarsana, *Geographies of Knowledge and Power* (Dordrecht, New York, Springer, 2015), p. 680.

155 Christaller's is briefly mentioned here: C. Doxiadis, *Οικιστικές Μελέτες Οικιστική Ανάλυση: Οδηγίες για τη Μελέτη των Χωροταξικών των Οικιστικών και των Πολεοδομικών Προβλημάτων και για την Ανοικοδόμηση της χώρας*, *[Ekistics Studies Ekistic Analysis],* Αθήνα: Υφυπουργείον Ανοικοδομήσεως, 1946.

had shaped, according to Herf, a unique in Europe, "reactionary modernist tradition" unique within Europe, which came to reconcile romantic ideals and technology with the framework of a German nationalist culture.[156] In response to the 1929 financial crisis, German nationalists rejected both western liberalism and Marxism and empowered the State as a powerful agent to manage the economy and social affairs. Under the National Socialism, the anti-capitalist and anti-Marxist approaches shaped also a planning culture which offered the central State spatial tools to promote an ideological/cultural transformation on the basis of the racial superiority of the German people and the assumed connections between community, land, and settlements.

During the so-called Recovery Years (1933-1936) the German state tried to respond to housing shortages and unemployment by promoting extensive planning interventions with a special focus on rural areas. Besides developing a vast highway network, the so-called Autobahnen, which manifested the central state's efforts to physically 'connect' the national territory and to connect cities with the countryside, other policies included the creation of rural communities and peasantry through a settlement policy offering different housing and land use typologies. Aiming to shape a permanent peasant class infused with a nationalist ideology, these policies provided housing in rural areas and in the urban periphery.[157] These extensive housing and rural policies manifested the social engineering goals behind these policies, and were partially implemented. In 1935 Germany further consolidated planning authority and facilitated spatial planning in direct connection to the concept of 'national space' under the Third Reich.

In this context, Christaller's focus on Southern Germany, at the time, was less appealing for introducing geography to economic theory than for combining quantified, mathematical methods, with a focus on pre-industrial and pre-capitalist processes of settlement building. As Barnes and Minca suggest, this merging of rationality/scientism with a "place-based rural romanticism" is precisely what made Christaller's theory appealing to the reactionary modernism of the Nazi's colonization of Eastern Europe, right after Germany's invasion of

156 See J. Herf, *Reactionary Modernism: Technology, Culture, and Politics in Weimar and the Third Reich* (Cambridge, Cambridge University Press, 1986).

157 See J. Mullin, "The Impact of National Socialist Policies upon Local City Planning in Pre-war Germany (1933-1939): The Rhetoric and the Reality", *Landscape Architecture & Regional Planning Faculty Publication Series*, 44, (1981).

Poland in 1939.[158] Christaller's regional planning approach proposed the alignment of planning, administrative and market regions on different scales. Following these assumptions, he went on to apply these ideas in the rural context believing that the Third Reich offered an opportunity to reorganize rural settlements and reinvigorate rural and farming communities.[159] Aiming to alleviate outmigration and what he saw as the decline of rural life—which the Nazi also considered a priority—he proposed the introduction of central places as a strategy to improve rural areas, both economically and culturally.[160]

By the end of the 1930s, Christaller had formulated the basic premises of a rural development program where the restructuring of settlements would proceed in parallel with rural industrialization that "would help stabilize and stimulate rural areas by absorbing surplus farm labour, reducing outmigration, and providing markets for local agricultural products and natural resources."[161] On these premises he envisioned a new regional settlement pattern the key component of which was a central village understood as a rural unit which included the separate functions of central places, agricultural areas and industrial settlements. The rural unit, the central village, would serve the surrounding six hamlet-villages and their dependent neighbourhoods and farms. In applying these principles to the planning of occupied Poland, Christaller developed a hierarchical administrative/economic model applied to all settlements: from the smallest farm to the capital of German Empire. In the background of German nationalism, Christaller's hierarchical model of settlements served not only the administrative logic of the Third Reich but also the racist ideology of German identity as place-based and distributed along 'organically' interconnected communities at various scales.

When Doxiadis arrived in Berlin for the writing of his dissertation, which was submitted in May 1936,[162] the centralisation of the planning apparatus of the German State and the regionalist and rural-based policies were already in place. Before his appointment in April 1937 to the Town Planning Department for the greater Athens area, Doxiadis gave lectures in

158 For a detailed analysis on Christaller's work for the Nazi, See R. E. Preston, "Walter Christaller's Research on Regional and Rural Development Planning during World War II. *METAR—Papers in Metropolitan Studies*, 52, Freie Universität Berlin, Institut für Geographische Wissenschaften: Gerhard O. Braun. 5, 2009.

159 *Ibid*, p. 9.

160 *Ibid*

161 *Ibid*, p. 10.

162 Doxiadis submitted his dissertation in Berlin Charlottenburg Technische Hochschule almost one year after his graduation from NTUA.

Berlin and Munich in reference to his thesis, collaborated in urban planning projects, and eventually published his dissertation as the second book of the series Beiträge Zur Raumforschung und Raumordnung (Contributions to Spatial Research and Regional Planning). Doxiadis' thesis was titled, *Raumordnung im Griechischen Stadtebau* or the *Organization of Space in Greek Town-Planning*—according to an English translation[163]— and its' goal was to uncover the geometric laws behind the spatial arrangement of classical and Hellenistic Greek architectural complexes.[164] This effort resonated with the planning culture of mid-1930s Germany and the attempt to merge romantic/spiritual and rational values.[165] This was highlighted in the book's prefaces written by Konrad Meyer, German agronomist and head of the Planning and Soil office[166]—where Christaller was also employed—and Daniel Krencker, an architect-archaeologist and Doxiadis' supervisor. Krencker wrote—stating that Doxiadis' thesis "demonstrate[d] the spirit of order" while testifying to an "eternal search of breaking through the laws, of forms of inner urge and destiny," qualities that both saw as crucial for Germany's "monumental tasks in urban planning, land planning and spatial research."[167]

Doxiadis' thesis aspired to study the underlying rationality behind what seemed to be an artistic creation, claiming there was an intended spatio-visual order in classical architecture. This system was based on the visual capacities of a 'universal' human subject positioned in privileged locations in space. In this respect, Doxiadis approach was similar to Christaller's thesis methodology, which had also tried to uncover the spatial rules behind what also

163 See Archive files 28795, Doxiadis Archives.

164 For analysis on Doxiadis' thesis and its intellectual context see: See K. Tsiambaos, *From Doxiadis' Theory to Pikionis' Work: Reflections of Antiquity in Modern Architecture*. (London, Routledge, 2017); D. Philippidis, *Κωνσταντίνος Δοξιάδης. Αναφορά στον Ιππόδαμο [Constantinos Doxiadis. Reference to Hippodamos]* (Athens, Melissa, 2015); K. Tsiambaos, "The Creative Gaze: Doxiadis' discovery", *The Journal of Architecture*, 14, 2, (2009), pp. 255–275. For Doxiadis preoccupation with antiquity and ancient cities as sources of knowledge on the modern, see M. Zarmakoupi, "Balancing Acts Between Ancient and Modern Cities: the Ancient Greek Cities project of C. A. Doxiadis", *Architectural Histories*, 3, 1, (December 2015), pp. 19, 1-22; P. Tournikiotis, "Η Αρχαία και η Μοντέρνα Πόλη στο Έργο του Κωνσταντίνου Δοξιάδη [The Ancient and the Modern City in the Work of Constantinos Doxiadis]" in A. Defner, ed., *Urban Planning in Greece from 1949 to 1974*, (Proceedings [of the] 2nd Conference of the Society of History of City and Urban Planning, Volos, University of Thessaly Press, 2000), pp. 85-98.

165 For the positive and critical reactions to Doxiadis' thesis in Germany, see K. Tsiambaos, *From Doxiadis' Theory to Pikionis' Work: Reflections of Antiquity in Modern Architecture*. (London, Routledge, 2017), pp. 5-24.

166 The Planning and Soil office was operating under Heinrich Himmler's Dienststelle des Reichskommissars für die Festigung des Deutschen Volkstums (the Commissariat for the Strengthening of Ethnic Germandom)

167 Author's translation from C. Doxiadis, *Raumordnung im Griechischen Stadtebau*, Heidelberg – Berlin: Kurt Vowinckel Verlag, 1937, vii.

appeared as a self-generated, seemingly natural process of settlement formation, and in turn, to devise a planning model to emulate that spatial order. Eventually, both methods advocated planning as a process of emulating the 'natural'. By referring to abstract 'natural' laws, these methods allowed to conceal the planner's intentions behind what seemed like an almost self-evident, 'natural', planning system.[168] These commonalities between the two approaches may suggest why Doxiadis found Christaller's geographic-economic theories appealing for developing a regional planning framework.

Germany's inter-war planning culture also resonated with ideas for regional and community planning in post-war Britain which informed Doxiadis' efforts to shape a vision for Greece's reconstruction. While Doxiadis' readings were mostly of German geographers and thinkers, he was also aware of some books by British planners such as Patrick Abercrombie's 1943 *Town and Country Planning.*[169] By reading Abercrombie, Doxiadis gained insights into British post-war planning culture which was marked by the establishment of new State planning bodies and legislation.[170] Promoting post-war socio-economic recovery, British planners, especially Abercrombie, promoted decentralising major urban centres (as in the 1943 London Plan), conserving agricultural land in wartime and in the post-war economy, and using a rhetoric of community which appealed, at the time, across the political spectrum.[171] Abercrombie believed regional planning could control urban growth, bring about balance between urban centres and the countryside, and, also, shape 'autonomous', 'organic' communities both in urban (neighbourhood) and rural (village) contexts.[172] The work of Patrick Geddes, whose ideas of "survey before plan" and, more importantly, the triad of "Place–Work–Folk",[173] which highlighted the complex interconnection between land,

168 For the use of Doxiadis' theory by D. Pikionis as a planning tool See K. Tsiambaos, *From Doxiadis' Theory to Pikionis' Work: Reflections of Antiquity in Modern Architecture*. (London, Routledge, 2017).

169 See Archive files 23735, Doxiadis Archives.

170 These included the establishment of the Ministry of Town and Country Planning in 1943, Town and Country Planning Act in 1944, New Towns act in 1946. See D. Matless, *Landscape and Englishness* (London, Reaktion Books, 1998), pp. 201- 234.

171 See D. Matless, "Communities of Landscapes, Nation, Locality, and Modernity in Interwar England", in R. Heynickx and T. Avermaete, eds., *Making a New World.* Architecture & Communities in Interwar Europe [colloquium] (Leuven, Leuven University Press, 2012), pp. 43-57.

172 Ibid, p. 43-57.

173 The inspiration for Geddes' 'triad' is the work of French sociologist Frederic Le Play. For an analysis of the connections between Doxiadis' and Geddes' thinking, See P. Pyla, *Ekistics, Architecture and Environmental Politics, 1945-1976: A Prehistory of Sustainable Development,* (PhD dissertation, Massachusetts Institute of Technology, 2002).

economy and people, were key to this understanding. Learning Geddes through Abercrombie, Doxiadis at the time, would recast anti-modernist traditions into the priorities of post-war reconstruction and centralised State planning. This knowledge informed his own efforts to promote institutional planning reforms in Greece; but more importantly, it reinforced his commitment to a regional planning approach as a tool to promote the revival of the countryside, also through community building.

1.5 Imagining the Nation as Organism

Influences from German and British planning cultures informed Doxiadis' early conception of Ekistics and especially the development of a regional and national scale strategy for Greece's Reconstruction. Echoing British and German discourses of "organicism" Doxiadis approached Reconstruction through the idea of the nation as a single community, unified by social and economic phenomena. Evading cultural or racial discourses, Doxiadis stressed the pervading economic transactions not only as connecting elements of the society but also as a model for the reorganisation of its administrative structures. On these assumptions, Doxiadis saw the need for a spatial strategy which would foster the country's socio-economic consolidation and territorial integrity, by restoring the continuity of administrative, social and economic structures that had been interrupted when the country was divided into German, Italian and Bulgarian zones of control.[174] Restoring communication and the uninterrupted circulation of people and commodities, on the one hand, and on the other, promoting the realignment of the state with the nation, were Doxiadis' key goals for reestablishing the 'organic' unity of the nation. **(Fig. 1.3)**

These views were mostly exhibited in a study titled, *Διοικητική Αναδιοργάνωση της Χώρας [*The *Administrative Reorganization of the Country]* which had been prepared earlier and published in 1948. In this study, Doxiadis exposed key assumptions behind Ekistics as a

174 German military forces controlled the major urban centres, Athens, Thessaloniki, central Macedonia, most of Crete and major islands. Italian forces controlled most of the Greek territory and the islands, while Bulgarian forces controlled Eastern Macedonia and Thrace along with some of the major food production areas.

broader vision for "the rational organisation of the country."[175] Echoing the influence of German geographers, Doxiadis found the desired unity of the nation in economic exchanges:

> What is the most natural expression of life? It's the circulation within the body of the whole country; it's the circulation of people and commodities. Because this circulation does not take place on a predefined rule but according to all the physical and social factors, which constitute life.[176]

This 'natural' circulation, Doxiadis claimed, was based on the rational behaviour of suppliers and customers:

> The supplier then and the customer who determine their economic relationships according to their interests, is one of the best proofs of the natural economic life as it develops in one place[177]

The free market was seen as a dynamic, free-flowing condition believed to be not only the correct but an inevitable solution, upon which the future of the society could be grounded. Doxiadis called for the "study of the current organisation and distribution of private economic functions in the country in order to see the living example of a correct solution" which could be used to resolve the country's "problem which is born by the lack of organisation in the country: unnecessary and in-organic transportation, poor citizen services, unnatural and uneconomic spatial development."[178] Echoing Christaller's research, Doxiadis alluded to an 'unplanned' order which could be traced. The argument was that by tracing the spatial laws that shape the private economy–a 'natural' socio-economic expression—then these can be turned into a norm to measure and adjust any divergences.

Doxiadis' use of the "economy-as-nature" analogy, in which economic laws are understood as physical laws,[179] led him to the use of the vocabulary of physics. Balance, equilibrium,

175 C. Doxiadis, *Η Διοικητική Αναδιοργάνωση της Χώρας* [*The Administrative Reorganisation of the Country],* Σειρά εκδόσεων του Υπουργείου Ανοικοδομήσεως, 13, Αθήνα: Υπουργείο Ανοικοδομήσεως, 1948, 7.

176 *Ibid*, p. 57.

177 *Ibid*, p. 58.

178 *Ibid*, p. 4.

179 See C. A. Prusik, "Economics as Natural-History: Adorno and the Critique of Neoliberalism", *Architecture and Culture,* 5, 2, (2017), pp. 165-174; and also D. Worster, *Nature's Economy: A History of Ecological Ideas* (Cambridge, Cambridge University Press, 1994); P. Mirowski, *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics* (Cambridge, Cambridge University Press, 1989).

energy and circulation were used as metaphors to understand human settlements, conflating the vision of the economy as the "most-natural" social arrangement with a vision of the nation and the community as an organic, living formation. So, the Reconstruction of the country was understood as a process of restoring a missing 'organic' unity achieved by shaping new administrative structures and new centres of economic and cultural life. Drawing on Christaller's key theoretical concepts of hierarchy and centrality, Doxiadis envisioned a hierarchical administrative structure aligned with the centres of economic and cultural life throughout the country. **(Fig. 1.4)**

Doxiadis understood the country's liberation and post-war Reconstruction as a rare opportunity for self-realisation and proposed the raising of "the populations' living standard" by improving the organisation of the country.[180] This option was connected to a vision of a peaceful nation, since the country's border would be finalised after the anticipated annexation of Dodecanese, in 1947 and the distancing from the irredentist aspirations of the first half of 20th century. In this light, he proposed the establishment of a territorially-based system of governance to form the backbone for the country's nation-building and socioeconomic development. Through a decentralized administrative structure, Doxiadis suggested, the State could exercise its sovereignty over both territory and population, while the latter could gradually form a new national consciousness/identity to be developed at the intersection of a (vertical) hierarchical administrative structure and (horizontal) everyday market exchanges.

Both the decentralisation of administrative structures and the idea of 'economy-as-nature' indicated technocratic, seemingly apolitical solutions which can also be seen as responses to the ideological and armed conflicts between left and right during, and especially after, the War.[181] Not only could this vision of Reconstruction be determined by these conflicts, but the country's entire future also depended on their outcome. Nevertheless, Doxiadis' vision for the country's reorganisation was far from natural. His attempt to naturalise socio-economic

180 See C. Doxiadis, *Η Διοικητική Αναδιοργάνωση της Χώρας* [*The Administrative Reorganisation of the Country],* Σειρά εκδόσεων του Υπουργείου Ανοικοδομήσεως, 13, Αθήνα: Υπουργείο Ανοικοδομήσεως, 1948, ια.

181 See for example, M. Mazower, ed. *After the War was Over: Reconstructing the Family, Nation, and State in Greece, 1943-1960* (Princeton, Princeton University Press, 2016); P. Voglis, *Η Αδύνατη Επανάσταση: Η Κοινωνική Δυναμική του Εμφυλίου Πολέμου [The Weak Revolution: The Social Dynamics of the Civil War]* (Αθήνα, Αλεξάνδρεια, 2014).

formations exemplified his alignment with the liberal politics of the free-market economy, and the domestic and international political powers that supported them. In the post-war climate this approach was justified as a commitment to democratic, international values in opposition both to authoritative (fascist and Nazi) regimes and the 'communist threat' of the Soviet Union, and could also be understood as an attempt to bypass, or else disguise, ideological tensions of all kinds. In this sense the nationalistic undertones of the "national revival" and the understanding of the nation as a unified body were not linked to a cultural/racial ethnocentrism but rather to a vision of modernity where every day economic exchanges were perceived as a common platform for social unity. The image of the self-interested producer and consumer as a model of self-regulated economic relations based on the implied rationality of social exchanges could be seen as fostering reconciliation among competing social groups. Similarly, the decentralised administrative structures was to be perceived as external to social antagonisms, and as forming centres of collective life, especially in the rural areas.

Doxiadis' vision for the reorganisation of the country exemplified some of the key premises and assumptions of Ekistics' framework manifesting both his theoretical influences and the circumstances of post-war Greece. So, his reconstruction program would focus on the management of rural areas and their population. In Doxiadis' mind, it was the rural societies which suffered greatly from the destructions of the War, and whose remoteness and economy required to be upgraded: connected to the central state, and to the "body of the country." In this approach, reorganising the country meant, especially, helping the population to resettle near the northern frontiers, where an uninhabited land was considered a risk to the country's territorial and political integrity.[182]

These assumptions would be reinforced under the influence of the economic and geopolitical priorities introduced by foreign missions amidst a Civil War which took place mostly in rural Greece.[183] The following chapter examines how these priorities informed the reformulation of Doxiadis' agendas within the context of Greece's recovery programs.

182 The Greek government feared that depopulated border regions would allow Greek leftist guerillas to receive support from the 'communist' Bulgaria, Albania, and Yugoslavia.

183 The timeframe of the Greek Civil War have been matter of academic disputes and political interpretations. Important here is to emphasize this three points: There were antagonisms between left and right

armed resistance groups during the German occupation; the first major armed fight took place in December 1944 in Athens which ended in early January 1945 with the defeat of the left; and that a full-scale military conflict took placed between 1946-49 in the countryside.

2 Rural resettlement in Greek Reconstruction

2.1 The Greek recovery program

Doxiadis had formulated Ekistics in response to the priorities of Greece's Reconstruction program, as these were framed by his theoretical and professional background at the time. The testing ground for Ekistics' planning framework was the Greek recovery program. From his position at the Ministry of Reconstruction, from December 1945, Doxiadis would be one of the key actors in defining the program's goals. However, his approach was adjusted to the economic and geopolitical agendas promoted especially after the American intervention in 1947 and the shifting priorities and complexities of the recovery programs. Before we examine more closely how Doxiadis' Ekistics was redefined during the Greek recovery program, let us consider the socio-political context and the changing circumstances within its three phases: during the British Economic Mission and the UNRRA aid (1946-47); the American Mission for Aid to Greece (AMAG) under the Truman doctrine (1947-48) and during the Economic Cooperation Administration (ECA) of the Marshall Plan (1948-52).[184]

2.1.1 The British Economic Mission and UNRRA, 1945-1946

Right after the country's liberation from the German forces, a Government of National Unity was created under Georgios Papandreou in October 1944, with the participation of the National Liberation Front [Εθνικό Απελευθερωτικό Μέτωπο].[185] The immediate goal at the time was to restore political 'normality' and to initiate the process of recovery. However, the political tensions between the left and the right within the country, under the direct foreign intervention and in the presence of British military forces, lead to the withdrawal of the National Liberation Front from the government and escalated to armed clashes in the centre

184 See G. Stathakis*, Το Δόγμα Τρούμαν και το Σχέδιο Μάρσαλ : Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece] (*Αθήνα, Βιβλιόραμα, 2004).

185 The National Liberation Front [Εθνικό Απελευθερωτικό Μέτωπο (EAM)] was created in Athens in 1941, on the initiative of the Greek Communist Party Κομμουνιστικό Κόμμα Ελλάδας (ΚΚΕ)] and served as the main resistance force against the German Occupation in Greece, along with the party's military resistance wing the Greek People's Liberation Army [Ελληνικός Λαϊκός Απελευθερωτικός Στρατός (ΕΛΑΣ)]. Another resistance group, the so called National Republican Greek League [Εθνικός Δημοκρατικός Ελληνικός Σύνδεσμος (ΕΔΕΣ)] was also created and funded by the British forces to serve as an "anticommunist counterweight." See M. Mazower, ed., *After the War was Over: Reconstructing the Family, Nation, and State in Greece, 1943-1960* (Princeton, Princeton University Press, 2016), p. 5.

of Athens in December 1944, between the supporters of the National Liberation Front and the police and military government forces, supported by the British military.[186] When the fighting ended in the early days of January 1945, the forces of the National Liberation Front into the countryside, and a peace agreement was signed that signalled the beginning of the Reconstruction project and pausing temporarily the conflict. During this time, post-war relief and early recovery measures were promoted by the British Military Liaison (ML) whose role extended to helping the government assume control of the territory, as well as by the US-supported UNRRA.[187] The war-torn country entered a cycle of economic and political volatility, in which successive governments appeared unable to restore the economy, equitably manage the relief program or lay the groundwork for future reconstruction. The contrast with unrealistic aspirations for war reparations and foreign aid further undermined confidence in the Greek political system's ability to combine reconstruction with required economic and political reforms.[188] The end of UNRRA's relief program in 1946 raised fears of the country's economic breakdown, prompting Britain to offer economic aid with the political support of US government. As soon as the Greek hopes for significant war reparations had been crushed in the end of 1945,[189] an aid agreement was signed between Greece and UK—the so-called "London Agreement" on 24 January 1946—that mostly took the form of loans and measures for economic stabilisation. Lack of confidence in the Greek political establishment was described as the reason for British Mission's announcement of withdrawal on 21 February 1947, which was followed by another US-led recovery program under very strict conditions. The arrival of the American mission in 1947 would be accompanied by an authoritative form of economic/political control which was also partially directed to military

186 These military clashes, referred as "Dekemvriana", were initiated after a number of protesters (33) were killed during a march organized by the National Liberation Front in the center of Athens in the early days of December. They lasted for 33 days and it was a unique case of conflict between military resistance groups in Europe. See P. Papastratis, M. P. Lymberatos, L. Sarafi, eds., *Από την Απελευθέρωση στα Δεκεμβριανά : Μια Τομή στην Πολιτική Ιστορία της Ελλάδας [From the liberation to the Dekemvriana: An intersection to the political history of Greece]*, (Αθήνα, Πρακτικά ημερίδας 19-23 Νοεμβρίου 2014, Σωματείο Σύγχρονη Ιστορία, 2016); M. Charalampidis, *Δεκεμβριανά 1944 : Η Μάχη της Αθήνας [Dekemvriana 1944: the battle of Athens]* (Αθήνα, Αλεξάνδρεια, 2014).

187 UNRRA's key goals were the organization and administration of relief in liberated allied territories by supplying food, medical supplies, and clothing; the repatriation of war prisoners, and the resettlement of deported people; and offering supplies and materials to help economic recovery.

188 For example, politicians resisted a brief attempt by economist Varvaresos to impose a tighter economic policy between 1945 and 1946. See G. Politakis, *The Post-War Reconstruction of Greece: A History of Economic Stabilization and Development*, *1944-1952* (New York, Palgrave Macmillan, 2018), p. 67.

189 The Paris Conference on reparations had met from 9 November to 21 December 1945.

support in response to the ongoing Civil War.

The suspension of substantial war reparations and foreign economic aid while a large section of the population had had no shelter since the war years, formed the backdrop to Doxiadis' intense campaigns for immediate action and coordination. Like most Greek engineers and architects at the time, Doxiadis envisioned the creation of an 'independent', technocratic government body to coordinate the relief and reconstruction project and to act as a central hub between foreign assistance and domestic authorities. From his position as Undersecretary for Reconstruction he would almost succeed, in mid-1946, in establishing an autonomous Organization for Reconstruction. After its rejection by the government of Constantinos Tsaldaris, he returned as General Director at the Ministry for Reconstruction, pursuing his agendas for housing and settlement planning as key priorities for the Reconstruction program.[190]

2.1.2 The Truman doctrine/AMAG, 1947-48

In anticipation of the American mission to Greece, domestic and foreign teams reported on the country's economic condition and proposed measures for its recovery and future development.[191] All were published around the same time and arrived at similar conclusions despite noticeable differences:[192] Greece needed an extensive program of investment in infrastructure and energy projects to utilise its mineral and water resources and form the basis of a rapid industrialisation program. While all the reports recognised the importance of Greek agriculture, all seemed also to agree that a robust industrial sector was the only strategy that would lift the economy above its depressed pre-war level. Even the report by United Nations' Food and Agriculture Organisation (FAO) confirmed that only industry could

190 Doxiadis was assigned the post of Undersecretary for Reconstruction (Υφυπουργός Ανοικοδόμησης, under the Ministry of Public Works) between 28 December 1945 and 4 April 1946, and in 5 April 1946, the post of General Director. In October 1947, the Ministry for Reconstruction became an independent ministry.

191 There was the 1947- *Report of the FAO Mission for Greece*; a 1947-report by Greek economists funded by UNRRA (See G. Politakis, *The Post-War Reconstruction of Greece: A History of Economic Stabilization and Development*, *1944-1952* (New York, Palgrave Macmillan, 2018), p. 184); the Greek government's proposal prepared by the "Organization for Reconstruction" headed by A. Demitracopoulos; and finally, the publication of the 1947 book, *Η Βαρειά Βιομηχανία στην Ελλάδα [Heavy Industry in Greece]* by the leftist lawyer-economist Dimitris Batsis.

192 For a comparison of some of these studies, See G. Politakis, *The Post-War Reconstruction of Greece: A History of Economic Stabilization and Development*, *1944-1952*, (New York, Palgrave Macmillan, 2018), p. 188.

absorb the surplus labour that could be freed up by mechanisation in agriculture. Industrialisation was the only path, all seemed to agree.

What all of these reports offered at the time, was, hope for a devastated country. By stressing, on the one hand, a bleak image of pre-war Greece as a poor country, lacking in capital and fertile land, struggling to feed its population while relying on a low-productive agricultural sector, on the other hand, they highlighted the country's untapped natural resources and its potential for socioeconomic development. All seemed to believe in the country's capacity to achieve rapid recovery and a self-sustained economy in the future. To the American mission, these programs presupposed undivided Greek support for American plans; whereas to the Greeks, they clearly indicated the country's urgent need for foreign assistance and external capital.

The arrival of the US mission in Greece was marked by the findings of yet another report delivered by Paul A. Porter in April 1947.[193] Porter's report affirmed the potential for industrialisation, an idea current among both Greeks and foreign missions. However, the aid that was subsequently offered to Greece was restricted by a very tight economic policy, in response to Porter's criticism of the Greek government's inefficiency in managing post-war relief and Greek elites' reluctance to share the burden of post-war reconstruction with the suffering, underprivileged population. Deeply suspicious of the Greek political establishment, Porter, and every other mission after him, proposed strict conditions and controls on the implementation of the recovery program aspiring to a rapid economic recovery so that the country could become "self-sustained" within five years.[194] Committed to the Truman doctrine, which had been announced on March 12, 1947, the American missions' economic goals were intimately entwined with US geopolitical priorities aspiring to enforce economic and political stabilisation as a way of preventing internal and external "communist"

193 See especially, M. Psalidopoulos, *Επιτηρητές σε Απόγνωση : Αμερικανοί Σύμβουλοι στην Ελλάδα, 1947-53: Από τον Paul A. Porter στον Eduard A. Tenenbaum [Watchdogs in Despair: American Consultants in Greece, 1947-53: By Paul A. Porter in Eduard A. Tenenbaum]* (Αθήνα, Μεταμεσονύκτιες Εκδόσεις, 2013); M. Psalidopoulos, *Ζητείται ένα Θαύμα για την Ελλάδα [Wanted: a Miracle for Greece]* (Αθήνα, Μεταμεσονύκτιες Εκδόσεις, 2006); G. Stathakis, Το δόγμα Τρούμαν και το Σχέδιο Μάρσαλ : Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece] (Αθήνα, Βιβλιόραμα, 2004), pp. 147-160.

194 G. Stathakis, Το δόγμα Τρούμαν και το Σχέδιο Μάρσαλ : Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece], (Αθήνα, Βιβλιόραμα, 2004), pp. 153.

influences. Using economic aid as leverage, they actively supported conservative political forces and used an interventionist approach to impose reforms on the economy. The US-Greek agreement signed in June 1947 gave AMAG almost absolute control over the country's economy and significant political power,[195] which strained the volatile political landscape.

Although Porter's report was in line with Greek hopes for industrialisation, there was a significant divergence between their respective estimates of the investments required. The much more conservative American estimates, as exemplified in the Porter report, would expose not only the excessive Greek aspirations for the recovery programs but also signalled a shift from rapid to a more modest economic recovery. Following the rhetoric, "every dollar will be used to make the Greek people self-sufficient and not to favour any particular group or side"[196], the actual funds used for recovery projects were restricted by the effort to keep the government's budget balanced, while the US aid would be divided between civil and military expenses to help the Greek State army in the Civil War, which had escalated in 1947. The limited US funding was mostly channelled to the reconstruction of infrastructures such as Piraeus port, Korinthos Isthmus, rail and road networks in Athens and Thessaloniki, and bridges, which had both economic and military significance. These projects were not only kept under the financial control of the AMAG but were also assigned to the US Army Corps of Engineers and US private companies. Other projects included temporary refugee settlement, and agricultural support projects such as land reclamation, irrigation, tree planting. The much-expected war reparations, which the Greek side was hoping to turn into developmental investment, were received partly in the form of mechanical equipment from Italy and Germany.[197] Making use of a very restricted economic funding and the even tighter economic policy followed by AMAG, only a few developmental projects went forward, most of which helped the economy to recover to pre-war levels.

2.1.3 The Marshall Plan and the Civil War, 1948-1952

The interventionist approach and the excessive control of US missions over the management of the Greek recovery program and the economy as a whole, continued also under the

195 The American Mission had special departments working on particular sectors of the Greek economy and also placed its own employees inside Greek ministries and public services. *Ibid*, p. 165.
196 Cited in Stathakis, 2004, p. 167.
197 *Ibid*, p. 205-213.

Marshall Plan, which was signed in April 1948.[198] AMAG was succeeded by the ECA[199] continuing the unreserved suspicion about the Greek establishment and political system, and, presumably, the commitment to a more socially equitable distribution of aid and its anticipated positive effects. The priorities of the program were now negotiated among many actors, in Washington, Paris and Athens, as the country's recovery was no longer strictly based on a bilateral agreement between US and Greece but was part of the European Recovery Program (ERP).[200] The tensions and internal debates among different branches of the mission, which were not always in agreement with the enforced policy, had also informed the way the program continued to postpone Greece's industrialisation, focusing instead on economic stability and military aid. The primary goal was to end the Civil War and promote refugee rehabilitation before economic development projects could be launched. The limited funding for developmental projects, and the tight economic policy, maintained Greece's dependency on foreign funding. By the end of the program, the goal to establish a self-sustained economy was not reached. Frequent elections and changes in Greek government were a result of multiple pressures on the political system: from the American missions that pushed for their economic policy to be accepted, legislated and enforced; the various local lobbies that tried to influence the policy and its implementation; and from the social reaction towards ambivalent measures which failed to address Greek society's post-war aspirations.[201]

The announcement of the Long Term Plan of Economic Recovery of Greece, 1948–1952

198 For the history of the Marshall Plan with some references on the Greek program See B. Steil, *The Marshall Plan: Dawn of the Cold War* (London, Oxford University Press, 2018); B. Machado, *In Search of a Usable Past: The Marshall Plan and Postwar Reconstruction today* (George C. Marshall Foundation, 2007). For more focused analyses on the Greek example: See G. Stathakis, Το δόγμα Τρούμαν και το Σχέδιο Μάρσαλ : Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece] (Αθήνα, Βιβλιόραμα, 2004); G. Politakis, *The Post-War Reconstruction of Greece: A History of Economic Stabilization and Development*, *1944-1952* (New York, Palgrave Macmillan, 2018); A. Kakridis, "Deus ex machina ?: Truman/Marshall Aid, Engineers, and Greece's Post-war Development Discourse", *Journal of Modern Greek Studies*, 27, 2, (October 2009), pp. 241-274.

199 The economic program would be separated from the military one which was coordinated by a new agency the so called Joint United States Military Advisory and Planning Group (JUSMAPG).

200 The Marshall Plan created the Organization for European Economic Cooperation (OEEC), an agency charged with the coordination of the program in Europe based in Paris, while the ECA was head headquartered in Washington and local missions in each country, such as ECA/Greece that was established in July 1948 and placed under the supervision of the US Embassy in Athens. An Office of Special Representative (OSR) based in Paris was coordinating local ECA missions with the headquarters in Washington.

201 Extensive strikes and protests took place in 1949 demanding the increase of wages which remained on the same levels during the recovery programs while taxes and the living costs had increased.

[Μακροχρόνιο Πρόγραμμα της Ελλάδος 1948–1952][202] reaffirmed the importance of industrial and energy development projects in leading the transformation of the country's economic structure.[203] However, continuing military aid, the refugee's rehabilitation programs and a tight economic policy continued to constrain direct and broad investments in development projects, with the exception of energy infrastructure and cement industries. The funding/approval of development projects were also examined and decided in connection with ERP's goals on a European level, which called for the liberalisation of national economies contemplating Europe as a common market area. Even after Greece's Civil War had ended in 1949, generating hopes of turning military aid into economic investments, the eruption of the Korean War, in summer 1950, signalled another period where military and defence parameters would take priority—eventually bringing the Marshall Plan to an end, while Greece joined the North Atlantic Treaty Organization (NATO). Faced with the termination of the economic aid and its socio-political consequences, the Greek recovery program was yet again focused on economic stabilisation, tax and labour reforms, and other institutional changes (following suggestions from the International Monetary Foundation (IMF)), while critical voices within ECA, concluded: "We stopped communism. But we left nothing sustainable in its place."[204]

By the end of the Marshall Plan, in 1952, the vision of Greece's industrialization had been almost abandoned. According to Stathakis, the turning point was the 1949 visit of Paul Hoffman, the president of ECA. Hoffman called Greece the "California of Europe" and pointed to the "untapped potential of agriculture and tourism as levers of economic growth."[205] This

202 Ανώτατο Συμβούλιο Ανασυγκροτήσεως (Higher Reconstruction Council – ASA), *Προσωρινό Μ*ακροχρόνιο Πρόγραμμα της *Ε*λλάδος *1948–1952* [*Temporary Long Term Plan of Economic Recovery of Greece, 1948–1952],* Athens 1948.

203 In analysing the four-year "Long-Term Plan" Stathakis (2004) emphasizes the role of the ECA/G in the drafting of the Plan's goals, whereas Politakis (2018) suggests that the plan was mostly the outcome of work done by the governmental Higher Reconstruction Council. Both however seem to imply that the Greek side followed American's demands for reforms and coordination of economic recovery. Politakis argues that the people that drafted this plan in the ASA were ambivalent towards the priority of industrialisation as were Greek «old industrialists and importers», who felt threatened by the changes. Stathakis analysis is more focused on the American side's restrictive economic policy and the priorities for a European-level program that made the industrialisation of Greece low priority while he often exposes the Greek side's exaggerated estimates for economic aid.

204 Cited in G. Stathakis, Το δόγμα Τρούμαν και το Σχέδιο Μάρσαλ : Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece] (Αθήνα, Βιβλιόραμα, 2004), p. 382.

205 Author's translation. Cited in *Ibid*, p. 330.

was a decisive moment not only for Greece's history but also for the development project as a whole. The idea that some countries were 'unable' to follow the industrialisation model because of their prevailing agricultural/traditional economy and their social, institutional and political conditions would become conventional wisdom with respect to countries of the European South,[206] and most of the Third World, promoting a model of foreign assistance without the risks of heavy capital investment.

The harsh realisation that American aid had reached 25% of Greece's Gross National Product (GNP) and financed the 67% of all Greek imports,[207] suggested a shift to development models such as agriculture and tourism that did not require heavy state funding or external aid (both unavailable). Agriculture and tourism had the potential not only to mobilise small-scale domestic private capital but also to develop into substantial foreign exchange earners. Greece was paradigmatic in this aspect. The collapse of the industrialisation model led to anxious debates about alternative development models which were based on slow-paced socio-economic transformations and local skills and resources.[208] Eventually, this development orientation contributed gradually to the establishment of a thriving tourism industry[209] in conjunction with the expansion of the construction sector as a major pillar of the post-war national economy. In fact, this development model served both the State's housing and tourism policies and the urbanisation patterns of the 1950s-60s that came in different forms: informal housing models in the urban periphery (the so-called "αυθαίρετα" [authereta])[210]

206 These ideas appeared in the Preliminary Program of Economic Development for 1953/54 in the NATO/OEEC Area. See *Ibid*, p. 405.

207 See B. Machado, *In Search of a Usable Past: The Marshall Plan and Postwar Reconstruction today* (George C. Marshall Foundation, 2007).

208 Around the same time, these ideas appeared in a report by the Greek economist K. Varvaresos, *Έκθεσις επί του οικονομικού προβλήματος της Ελλάδος*, [Report on Greece's Economic Problem] (Athens, Savallas, 1952). For the reactions of engineers and the Technical Chamber of Greece for abandoning the industrialisation vision, see A. Kakridis, "Deus ex machina?: Truman/Marshall Aid, Engineers, and Greece's Post-war Development Discourse", *Journal of Modern Greek Studies*, 27, 2, (October 2009), pp. 241-274.

209 On Greece's post-war politics of tourism, see for example: Μ. Νικολακάκης, *Μοντέρνα Κίρκη: Τουρισμός και Ελληνική Κοινωνία την Περίοδο 1950-1974 [Modern Kirki: Tourism and Greek Society in the Period 1950-1974]*, (Αθήνα, Αλεξάνδρεια, 2017); S. Alifragkis and E. Athanassiou, "Educating Greece in Modernity: Post-War Tourism and Western Politics", *The Journal of Architecture*, 18, 5, (2013), pp. 699-720; Α. Βλάχος, *Τουρισμός και Δημόσιες Πολιτικές στη Σύγχρονη Ελλάδα 1914 - 1950: Η Ανάδυση ενός Νεοτερικού Φαινομένου*, [Tourism and Public Policy in Contemporary Greece 1914-1950: The rise of Modern Phenomenon] (Αθήνα, Εκδόσεις Κέρκυρα - Economia Publishing, 2016).

210 For a critical analysis of informal housing in Greece see, M. Mantouvalou, M. Mavridou, and D. Vaiou, "Processes of Social Integration and Urban Development in Greece: Southern Challenges to European Unification", *European Planning Studies,* 3, 2, (1995), pp. 189-204. For earlier attempts to map the

and the spread of the multi-story apartment building (Πολυκατοικία [Polykatoikia]) in urban spaces, mainly through a construction model that would provide for building development in exchange of land; the so called "Αντιπαροχή" [Antiparochi].[211] These urbanisation processes (as well part of tourism development), were aligning to the particular features of the Greece economy and the scale of the land and construction system, which largely relied on small landownership and relatively small-scale private capital investments.

Following the arrival of the American mission, military conflicts, socio-political dynamics and shifting economic priorities at different scales, Doxiadis remained in charge of a far-flung Reconstruction program, focused mainly on rural Greece, promoted by the independent Ministry for Reconstruction. Doxiadis was actively involved not only in implementing housing reconstruction and settlement planning, but would eventually, participate in shaping the priorities of the Reconstruction program. The full extent of Doxiadis' role in the recovery program will not be analysed here.[212] Instead we will turn our attention to the way Ekistics was first applied, as a set of spatial and architectural strategies for managing the rural population and then in connection with the economic and geopolitical priorities set by the American missions in Greece.

2.2 The Ekistic problem of Greece

From the outset Doxiadis had set the priorities of the Greek Reconstruction as a problem of population management, with a focus on the rural areas. This approach was largely based on the rather conservative inter-war discourse — which continued to have traction in the difficult post-war years — [213] advocating that Greece had limited resources to sustain a surplus

phenomenon see for example, A. Romanos, "Illegal Settlements in Athens", in Oliver, Paul, ed. *Shelter and society* (New York, FA Praeger, 1969); R Bjørn, "Settlements without planning: Athens." *Ekistics* (1979), pp. 82-100.

211 See D. Lampropoulou, *Οικοδόμοι: Οι Άνθρωποι που Έχτισαν την Ελλάδα: 1950-1967 [Builders: The People Who Made Greece: 1950-1967]* (Athens, Bibliorama, 2009); I. Theocharopoulou, *Builders, Housewives and the Construction of Modern Athens* (London, UK, Artifice books on architecture, Black Dog Publishing Limited, 2017).

212 This is the special focus of an ongoing research program, titled: "Spatial Politics in the Context of Development Programs During the Postwar Reconstruction in Greece: International influences, Social/Political Forces and Architects' Involvement", NTUA, 2018-9. (Research team: Petros Phokaides, Loukas Triantis, Pashalis Samarinis, Advisor: Panayiotis Tournikiotis)

213 In post-war years there were increasing fears for overpopulation inspired combined with concerns for environmental degradation. See W. Vogt, *Road to Survival* (New York, William Sloane Associates, Inc., 1948); F. Osborn, *Our Plundered Planet* (New York, Pyramid Publications, 1948).

population. This problem was thought to be especially severe in rural areas where people had either to tolerate low living standards or rely on state support. Doxiadis expressed these concerns not only because rural areas had been most affected by war damage but also because the country's population was increasing by approximately 1% each year, which threatened to strain, still more, the country's limited resources and undermine the primary goal of raising the population's living standards. Fears of an over-populated country with low agricultural production were seen as an immediate threat to Greece's recovery and placed the management of the rural population at the top of Doxiadis' agenda, well before the arrival of the American mission in 1947.

The primary goal of these strategies was to facilitate the rural population's return to their villages, the stabilization of rural life, and the cultivation of the land. By restoring the networks of small rural settlements, Doxiadis aspired to increase agricultural production and food consumption which had plummeted because of the war.[214] The abandoned land and the uprooted population was understood not only to threaten the country's recovery from within but also to leave frontier zones vulnerable to external territorial threats, while the mobilisation of the National Liberation Front in the countryside was a factor that could not be undermined. Doxiadis argued that the uninhabited frontier of Northern Greece, from which the population had been expelled during the war, posed "a national risk",[215] and urged its speedy resettlement.

Doxiadis' arguments would rely on the extensive use of statistics, which aimed to form a direct link between the management of the population and housing production. Using projections based on housing production and population changes, Doxiadis tried not only to 'naturalise' the connection between the built environment and population management but also to approach them through a managerial perspective. In other words, what these statistical images suggested was that housing construction was an effective strategy to manage the country's increasing population. In turn, the population's living standards and the nation's well-being were tied to the State's ability to employ credible 'scientific' tools to plan and

214 By Doxiadis' estimates, a total 18-20% decrease from pre-war agricultural production. C. Doxiadis, *Οικονομική Πολιτική δια την Ανοικοδόμησιν των Οικισμών της Χώρας* [Economic Policy for the Reconstruction of the Settlements of Greece], Σειρά εκδόσεων Υφυπουργείου Ανοικοδομήσεως 3, 1946, 13.

215 *Ibid*, p. 13.

promote an efficient housing construction program. The concern was that the lack of such a plan and program would leave a serious problem — one with a great social and economic impact on the nation's moral, health, and productivity — unsolved. This was a powerful argument that resonated with the vision of post-war reconstruction and of Greece's long-term 'progress'. The quantification of the built environment was not only a response to the urgent need for centralised coordination of the reconstruction program, but also a way to make explicit the technical and architectural expertise required to advance such a large-scale and crucial enterprise. **(Fig. 2.1)**

While this overarching strategy of rural resettlement and housing reconstruction was clearly important in Doxiadis' mind, the greatest challenge of the period was lack of funding combined with the urgent crisis of thousands of homeless population. Motivated more by the fact that reparations from "those that caused the destruction, the Germans, the Italians, the Bulgarians, the Albanians" were unavailable and Allied support was minimal, Doxiadis called for a realistic approach prioritizing firstly, collecting available funds within the country and secondly, contracting international loans.[216] Foreign aid and war reparations, if received, would be supplementary. Meantime, Greece needed to rely on its own resources, and borrowing arguments from the left he suggested imposing an asset tax on wartime property transactions[217] and a universal tax on all Greeks, "[as] an act of justice from the sheltered to the homeless."[218] The income from these taxes and various kinds of public assets would all be managed by the independent Organization for Reconstruction, which Doxiadis tried unsuccessfully to establish in April 1946, in his attempt to protect the entire program from political tensions, bureaucratic processes and public accounting. Doxiadis' efforts to place the reconstruction program under a centralised State agency had the support of many engineers

216 *Ibid.*

217 There were 36.000 property transactions in Athens and a total of 250.000 in the whole country. See *Ibid*, p. 42. Greek architects in the Left also supported asset taxes inspired from German experience in the First World War (Hauszinssteuer) and especially the Viennese housing programs of the 1920s. See A. Yerolympos, "Πόλεις και Εθνικός Χώρος σε Κατάσταση Πολιορκίας (1945-1952) [Cities and National Space in Siege]", in Ch. Hadjiiosif, ed., *Ιστορία της Ελλάδας του 20ού αιώνα, 1945- 1952 [History of Greece in the 20th Century, 1945-1952]* (Αθήνα, Βιβλιόραμα, 2009), pp. 157-182.

218 See C. Doxiadis, *Οικονομική Πολιτική δια την Ανοικοδόμησιν των Οικισμών της Χώρας* [Economic Policy for the Reconstruction of the Settlements of Greece], Σειρά εκδόσεων Υφυπουργείου Ανοικοδομήσεως 3, 1946, 30.

and parliament members who seemed to agree on the urgency of developing housing solutions for a war-stricken population, but many others also publicly opposed this.[219]

At the time, calculations estimated the number of homeless or improperly housed families at more than a hundred thousand, while the coming winter posed a greater threat especially for the population in the mountains. Doxiadis' statistics would be even more elevated and by also considering the number of new families created during the war and after the liberation, he estimated that the country required a total of around 500.000 units of family housing. Simultaneously, the first housing program that provided 30.000 temporary houses of 20sq.m., often incomplete, was considered a complete failure and a waste of scarce funds.[220] Offering a social justice 'spin' on a problem shaped by the lack of funding and time Doxiadis proposed "[that] instead of having a section of the population in perfect buildings and another in temporary ones, it would be advisable, to have an even greater section of the population living in sections of permanent buildings."[221] He argued that it was "required and inevitable" to provide 'semi-permanent' houses at minimum cost on a national scale. Throughout these years he would refrain from temporary solutions as he feared they would either lead to the creation of 'slums' ("τρώγλες") or to the creation of empty shells with no future use. In the rural areas, temporary houses would not offer the incentive for permanent settlement which was Doxiadis' main concern.

For 1946-47, Doxiadis set the goal to construct 60.000 semi-permanent dwellings in 1200 villages and an additional 10.000 in urban centres, to improve living conditions. In rural areas, the 'semi-permanent' building solutions were called building 'nuclei' [πυρήνες] with two rooms and a total size of 42.5 sq.m (5.00X8.50m). These were constructed with local materials

219 See the meeting organised on this issue with the participation of members of parliament and state officials in *Πρακτικά Συσκέψεως Ανοικοδομήσεως, Αθήνα 25 - 27 Απριλίου 1946 [Minutes of the Conference on Reconstruction: Athens, April 25 - 27, 1946]*, Σειρά εκδόσεων Υφυπουργείου Ανοικοδομήσεως 15, Αθήνα 1946.

220 This program was assigned to the Agricultural Bank, which had an extensive network of operating offices and storage spaces in the country. The budget was 2.000.000 English pounds. The outcome was the creation of 13000 completed houses and another 17000 with a roof but neither windows nor walls. See more details in Πρακτικά Συσκέψεως Ανοικοδομήσεως, Αθήνα 25 - 27 Απριλίου 1946 [Minutes of the Conference on Reconstruction: Athens, April 25 - 27, 1946], Σειρά εκδόσεων Υφυπουργείου Ανοικοδομήσεως 15, Αθήνα 1946, 17.

221 See C. Doxiadis, *Οικονομική Πολιτική δια την Ανοικοδόμησιν των Οικισμών της Χώρας* [Economic Policy for the Reconstruction of the Settlements of Greece], Σειρά εκδόσεων Υφυπουργείου Ανοικοδομήσεως 3, 1946, 37.

(stone or bricks) and a wooden or concrete roof. **(Fig. 2.2)** Gradually the idea of the nuclei was developed into 12 types, in order to adapt to specific family patterns for 2-3 people (25sq.m), 4-6 people (30sq.m), 7-9 people (35 sq.m.).[222] These cores would be offered as a quick remedy for the urgent housing problem while forming a 'foundation' for the future extension of the house. In this light, rural settlements were envisioned as dynamic and growing, wherein both single family houses, and the settlement as a whole, would be developed in the future, by the State or the family, through extensions. The goal for Doxiadis was, as he stated, not experimentation with "ideal houses" but the creation of the "maximum possible number of houses corresponding to the economic condition of the country."[223]

Within these priorities, the Ministry for Reconstruction promoted a building policy aspiring to offer rapid solutions for the housing problem by organising a vast logistical enterprise. The central hub of this enterprise, the Ministry, became in the following years, the agency responsible for managing extensive flows of domestic and foreign capital, imported and local construction material, knowledge, production and expertise. Successive studies on rural housing, design and construction guidelines, and experiments in low-cost housing construction were performed to explore fast, low-cost and locally-based solutions. Decentralisation of storage infrastructure, local technical offices and local committees were organised to promote housing and resettlement policies throughout the country. **(Fig. 2.3)**

2.3 Resettlement policies in rural Greece

As the construction of these "semi-permanent cores" would eventually fix the location of future houses, Doxiadis' next priority was to contemplate the location of the settlements. Following the earliest arguments about the need to "restructure" (Ανασυγκρότηση) rather than simply "rebuild" (Ανοικοδόμηση) the country, he advocated relocating settlements so as to "shape the country's ekistic network in such a way as to promote the proper distribution of the population in space and the development of settlements with regard to their position,

222 See J. Papaioannou, Μέρος Ι [Part I], *Η Κατοικία στην Ελλάδα: Κρατική δραστηριότης [Housing in Greece: State's Activity*] (Athens, Technical Chamber of Greece, 1975), pp. 150–160; Υφυπουργείον Ανοικοδομήσεως - Διεύθυνσις Αγροτικών Κατασκευών, *Πρόγραμμα και Κανονισμοί Έργων Ανοικοδομήσεως [Programme and Regulations for Reconstruction Projects]*, Αθήνα: Υφυπουργείον Ανοικοδομήσεως, 1946, 219-243.

223 See the unfinished "Account text for the Ministry for Reconstruction" [In Greek]. Archive files 21960, Doxiadis Archives.

size and character."[224] Doxiadis thought that the Reconstruction program offered a unique opportunity to upgrade the rural population's living standards, which meant not only providing them with better-constructed houses but also offering them a healthy and economically viable environment. In doing so, the program would achieve the "proper distribution of the population of space" by removing what were thought to be 'incorrect' settlement patterns shaped in the recent and distant past. Settlements constructed in the Ottoman era in the mountains that lacked arable land were thought to be not only outdated, but also non-viable. The more recent refugee settlements in Greece constructed in the 1920s to house the refugees coming from Minor Asia after the Greek-Turkish treaty also consisted of "villages in infertile soil, villages within swamps, settlements in distance from road networks."[225] At the same time, Doxiadis proposed a cautious strategy which needed to take into account the needs and the desires of villagers and even stressed the need to carefully compare all the "reasons that keep the village in its old position with those that necessitate its relocation"[226] proposing in-depth surveys for each rural settlement undertaken by interdisciplinary teams of architects, geologists, civil engineers, agriculturists, and medical hygienists. In 1948, according to Doxiadis, these committees had examined 380 settlements, proposing to relocate or group 230, of which a final number of 115 settlements were identified for relocation and 42 were under construction.[227]

For the numerous settlements that were excluded from the relocation, Doxiadis offered more modest modifications such as the reduction of building density when possible and especially the construction of community centres to encourage sociocultural change. By further discouraging the demolition of existing buildings, he even proposed to situate social centres in the periphery of settlements as a way to influence their future change.[228] Through these

224 *Ibid*.

225 C. Doxiadis, Ανασυγκρότηση και όχι Ανοικοδόμηση [Reconstruction not Rebuilding], *Το Βήμα,* 27 September 1945, [Signed as Έλλην Τεχνικός [Greek Technician] Archive files 21957, Doxiadis Archives.

226 See C. Doxiadis, Οικιστικές Οδηγίες [Ekistic Guidelines], in Υφυπουργείον Ανοικοδομήσεως - Διεύθυνσις Αγροτικών Κατασκευών, *Πρόγραμμα και Κανονισμοί Έργων Ανοικοδομήσεως [Programme and Regulations for Reconstruction Projects]*, Αθήνα: Υφυπουργείον Ανοικοδομήσεως, 1946, 191-207.

227 Doxiadis claims, that the relocation was decided for agricultural/economic reasons (20%), soil problems (23%), for lack of water resources (8%), for 'ekistic' purposes (30%), for transportation (5%), and for other reasons (4%). Archive files 21960, Doxiadis Archives.

228 See the guidelines he outlines in the book: Υφυπουργείον Ανοικοδομήσεως - Διεύθυνσις Αγροτικών Κατασκευών, *Πρόγραμμα και Κανονισμοί Έργων Ανοικοδομήσεως [Programme and Regulations for Reconstruction Projects]*, Αθήνα: Υφυπουργείον Ανοικοδομήσεως, 1946, 210.

indirect and ad-hoc forms of interventions whose outcome was tied to a systematic, on-site examination of the actual conditions, Doxiadis exhibited an ambivalence towards broad-scale social transformations recognizing also the value of improving existing production and social patterns.

Doxiadis' ambivalence derived not from an idealisation of rural life, but from his recognition that the country was in a transitional period, since its production model and its "economic role in the rising new world" had yet to be determined.[229] Therefore, the distribution of the population ("demographic policies") through the planning of the settlements ("ekistic policies") was impossible to finalise.[230] Yet Doxiadis, as in the 'semi-permanent' housing solutions he was negotiating between short-term and long-term priorities, was exploring policies that could be "very 'plastic' so that they are adaptable to the combination of old and new, slowly emerging tendencies."[231]

Ultimately, Doxiadis' agenda was to reverse the decline of the rural areas, not to challenge or rapidly transform existing socio-economic patterns based mainly on the widespread small-scale family farming model. This model complied with the dominant discourse of Greece as a 'poor' land that supported low-population densities sustaining extensive agricultural populations. Keeping a dispersed settlement pattern of small rural communities meant that families could continue to live off the land by maintaining local skills and low-productivity methods for small-scale cultivation plots. The viability of the existing model was related to the settlement patterns, which Doxiadis seemed to have no intention of changing. At a time when the dominant agenda envisaged industrialising the country, Doxiadis and his team at the Ministry, were preoccupied with programming an agrarian transformation focused on creating self-sustained rural settlements. This vision was partly founded on a perception of rural societies as self-contained and autonomous communities, where the village was shaped by the constraints of its environment. Conceptualised as a micro-productive unit or else as "a

229 C. Doxiadis, *Οικιστική Πολιτική για την Ανοικοδόμηση της Χώρας με ένα Εικοσάχρονο Σχέδιο [Ekistic Policy for the Reconstruction of the Country on a Twenty-Year Program],* Υφυπουργείον Ανοικοδομήσεως, 1947, 57.

230 C. Doxiadis, *Οικιστική Πολιτική για την Ανοικοδόμηση της Χώρας με ένα Εικοσάχρονο Σχέδιο [Ekistic Policy for the Reconstruction of the Country on a Twenty-Year Program],* Υφυπουργείον Ανοικοδομήσεως, 1947, 57.

231 C. Doxiadis, *Οικιστική Πολιτική για την Ανοικοδόμηση της Χώρας με ένα Εικοσάχρονο Σχέδιο [Ekistic Policy for the Reconstruction of the Country on a Twenty-Year Program],* Υφυπουργείον Ανοικοδομήσεως, 1947, 56.

factory utilising its surrounding vital space" [232] this vision proposed upgrading housing conditions and improving agricultural productivity by establishing connections to transport networks, or developing small-scale industries for processing agricultural products. This model of a 'vertically' organised rural settlement, which presumably could turn rural societies into "optimistic workers of a healthy, living organism," [233] not only proposed an alternative economic recovery and developmental model—vis a vis the industrialisation discourses—it was also embedded in Doxiadis' agenda for nation-building.

Doxiadis' settlement planning was not only defined by recently established productive patterns, it also shared much of their socio-political agenda, exposing yet another influence behind Doxiadis' particular focus on rural resettlement policies. This influence stemmed from the embedded experience of the rehabilitation of refugee population in Greece the 1910s and 1920s and suggests a positive appreciation of rural resettlement policies' socioeconomic impact.[234] Specifically, rural resettlement was a key state-led strategy employed to accommodate the greater part of the refugees who arrived from Balkan countries and Asia Minor, before and after, the 1923 treaty on population exchange between Greece and Turkey.[235] Among others, with support from the League of Nations, nearly 1300 rural settlements were created in Northern Greece. This included re-using formerly abandoned villages or planned expansions of existing villages and towns, as well as developing completely new settlements of between 100 and 500 families.[236] A refugee rehabilitation committee, of

232 S. Kydoniatis, Η Θέσις του Αγροτικού Χωριού [The Location of the Rural Village], in Υφυπουργείον Ανοικοδομήσεως - Διεύθυνσις Αγροτικών Κατασκευών, *Πρόγραμμα και Κανονισμοί Έργων Ανοικοδομήσεως [Programme and Regulations for Reconstruction Projects]*, Αθήνα: Υφυπουργείον Ανοικοδομήσεως, 1946, 256.

233 *Ibid.*

234 Apostolos Doxiadis (1874-1942) was a paediatrician closely involved in the interwar resettlement policies through his position as Minister of Welfare and Undersecretary of the Ministry of Hygiene. See E. Kontogiorgi, *Population Exchange in Greek Macedonia: the Rural Settlement of Refugees, 1922-1930* (New York, Oxford University Press, 2006); See also V. Theodorou, and D. Karakatsani, "Health Policy in Interwar Greece: The Intervention by the League of Nations Health Organisation", *Dynamis* 28, (2008), pp. 53-75.

235 A first influx of Greek refugees came from Bulgaria, eastern Thrace, Asia Minor, and the Caucasus between 1913 and 1915 and was around 120,000. Around 30.000 were resettled in the area of Thessaloniki. The major wave of refugees, approximately 1.2-1.5 million, arrived from different neighbouring countries after the signing of the Treaty of Lausanne (July 1923), which dictated that all Christian inhabitants of Greek origin, living in Eastern Thrace and Asia Minor move to Greece, and Muslims, from Greece to Turkey.

236 See A. Yerolympos, "Inter-war Town Planning and the Refugee Problem in Greece: Temporary 'Solutions' and Long-Term Dysfunctions", in R. Hirschon, ed., *Crossing the Aegean: an appraisal of the 1923 compulsory population exchange between Greece and Turkey.* Vol. 12 (New York, Berghahn Books,

which Doxiadis' father, Apostolos, was also a member, was instrumental in providing standard rural family houses, which the refugees would be able to extend in the long run.[237]

Such was the extensiveness of this resettlement program that it attracted the attention of international philanthropic bodies, such as the American Rockefeller Foundation, the Phelps–Stokes Fund and Near East Relief which, along with Greek officials, actively promoted village creation along with other land reform policies.[238] Together with the distribution of cultivated land, health improvement policies, and irrigation projects, resettlement policies had multiple goals: stopping rural-urban migration, developing the agricultural economy and promoting the refugees' socio-political integration and the country's national homogenisation. Following the land distribution that had been promoted by inter-war liberal governments,[239] which established small landownership and capitalist production modes, post-1923 State interventions became the vehicle for intense nation-building processes. The refugee problem remained a top priority in the country's national politics in the next decades, while its impact on the economy and on rural and urban geography was unprecedented.[240] Because of the influx of refugees, as Gerolympou has argued, Greece had witnessed the dual processes of urbanisation and ruralisation before the War.[241] Spatial patterns shaped by the refugees' settlement, mainly on the periphery of the main urban centres and the countryside, reflected

2003), pp. 133-145; and A. Yerolympos, Πόλεις και Εθνικός Χώρος σε Κατάσταση Πολιορκίας (1945-1952) [Cities and National Space in Siege], in Ch. Hadjiiosif, ed., *Ιστορία της Ελλάδας του 20ού αιώνα, 1945- 1952 [History of Greece in the 20th Century, 1945-1952]* , (Αθήνα, Βιβλιόραμα, 2009), pp. 157-182.

237 Greek Refugee Settlement Commission (RSC) or Επιτροπή Αποκατάστασης Προσφύγων (ΕΑΠ), was established in 1923 and headed by Henry Morgenthau an American lawyer and real-estate magnate and US ambassador to the Ottoman empire. Morgenthau had a key role in securing a loan from Britain to fund the resettlement program. See H. Morgenthau, *I Was Sent to Athens* (New York, Garden City, N.Y., Doubleday, Doran & Co, 1929) and B. Clark, *Twice a Stranger: The Mass Expulsions That Forged Modern Greece and Turkey* (Harvard University Press Cambridge, Massachusetts, 2006).

238 See H. B. Allen, *Come over into Macedonia: The Story of a Ten-Year Adventure in Uplifting a War-Torn People (*New Brunswik, Rutgers Univ. Press, 1943).

239 These land reforms were promoted by Elefterios Venizelos in 1917 and continued after 1923 by breaking up larger estates (çiftlik) to give land to incoming refugees as well as landless peasants.

240 See for example L. Leontidou, *Πόλεις της σιωπής. Εργατικός εποικισμός της Αθήνας και του Πειραιά 1909-1940* [Cities of silence. Working-class settlement of Athens and Piraeus 1909-1940] (Αθήνα, Θεμέλιο, 1989).

241 See A. Yerolympos, «Πόλεις και Εθνικός Χώρος σε Κατάσταση Πολιορκίας (1945-1952) [Cities and National Space in Siege]», in Ch. Hadjiiosif, ed., *Ιστορία της Ελλάδας του 20ού αιώνα, 1945- 1952 [History of Greece in the 20th Century, 1945-1952]*, (Αθήνα, Βιβλιόραμα, 2009), pp. 157-182.

social/geographical divides based upon social identity, class, and political affiliations, which survived the end of German occupation in 1944 and played a key role in the Civil War.

From this perspective, the post-war reconstruction project was an attempt to reclaim rural areas and societies which, in Doxiadis' eyes, had not only suffered from the war but been 'side-tracked' by promises of an alternative future –promises "of another social regime." Ultimately, reconstructing the rural would mean shaping continuities with the legacies of inter-war resettlement and land reform policies. Even if this meant addressing some planning errors, the key goals remained the same: managing the population using settlement planning and housing as vehicles for nation-building, and reviving the agricultural economy in the name of a centralised, sovereign State. The work that Doxiadis was promoting as Undersecretary for Reconstruction between 1945-1946 brought to the foreground two key goals of Ekistics agendas: firstly, the promotion of rural areas' socioeconomic recovery through a decentralised, locally based approach, and secondly, the understanding of housing as a crucial socio-economic index that called for national-scale, state-led planning strategies. Doxiadis would be actively promoting both strategies through his Office's numerous publications and his autographed and unsigned press articles as a form of campaigning that aimed not only to inform the public, as he often claimed, but also to legitimize his agendas in an extremely volatile political scene. He also tried to catch the attention of the American mission, whose arrival was anticipated in the beginning of 1947.[242] The arrival of the American aid in summer of 1947 and the escalation of the Civil War strife in the same year would place additional economic and geopolitical demands on the reconstruction program and on the rural areas.

2.4 The economics of rural reconstruction

Doxiadis' Reconstruction project established continuities with inter-war rural settlement planning using the State as the common element to envision an ever more coordinated and systematic planning approach. The arrival of the American mission, however, signalled also an important shift in the framing of the Reconstruction by the logic of an austere economic management. Doxiadis' planning strategies for the reconstruction of the rural areas were further systematised through exchanges between foreign and local expertise. Signalling a

242 In October 1947 the Ministry for Reconstruction was separated from the Ministry of Public Works. Doxiadis keeped the post of the General Director in the Ministry for Reconstruction.

decisive move from the inter-war 'philanthropic' approach, the post-war resettlement policies would be mostly framed by technocratic and economic priorities exposed continuities and shifts in the transnational histories of rural planning.

Doxiadis' agenda for the Reconstruction, as these had been developing in 1946-47, were applauded in Paul Porter's 1947 report:

> There is much to be commended in the way in which the Ministry [Reconstruction] has proceeded […] It has recognized the necessity of limiting government aid to a minimum and has developed a plan whereby government funds are used to construct a nucleus housing unit which will provide minimum shelter and which can later be expanded through the individual efforts of the homeowner.[243]

Minimizing government funds and leaving room for private initiatives was AMAG's priority from the outset, so Porter was rather sceptical of Doxiadis' proposals for resettlement and village planning, suggesting that changes in settlement location or layout would end up "delaying action on part of a homeowner who has the money to rebuild his house."[244] Doxiadis' semi-permanent solutions, which tried to negotiate society's expectations for immediate housing relief and the technocratic long-term planning priorities, were turned by Porter and AMAG into a broader economic agenda for Greece's housing problems, pushing even further for mobilising private capital: "The ultimate solution to the Greek building problem must rest with private capital and initiative."[245]

Thus far, Doxiadis' approach implied the idea of the State as the main welfare mechanism responsible for rebuilding the country's destroyed housing stock so as to compensate victims of the War and to manage the population for political and economic reasons. This approach depended on substantial funding by the State and/or external aid for a small portion of what Doxiadis estimated Reconstruction would require on national scale. The 'geographical' distribution of this funding was mainly based on Doxiadis' 'political' criteria, such as the urgency of resettling the frontier, and evaluating the level of destruction. In contrast, in

243 See P. Porter, *Report of the American Mission to Greece*, Harry S. Truman Library, Papers of Stuart Rise, 1947, 41.

244 *Ibid*, p. 42.

245 Porter's initial proposal was for the development of a five-year program to build 62.500 dwellings. See *Ibid*, p. 42.

accordance with their economic policy the American mission's criterion for the anticipated distribution was, rural income.

A study conducted by Doxiadis' team tried to respond to the question whether "Greek farmers had the economic capacity to undertake all or part of the cost for the reconstruction of destroyed houses."[246] In the absence of data and methods to capture the actual income, the study followed an alternative calculation method for average rural family income. Based on many assumptions and outdated pre-war data, the study combined regional agro-economic statistics on production levels, mapping of cultivation types and land uses, census data and patterns of land property. By estimating the income generated from specific crop cultivations and additional income coming from livestock farming the study estimated an average family income after subtracting food and clothing costs. The ultimate goal was to map the country's surplus family income: information which could be utilised for Reconstruction. This exercise produced an abstract representation of farming conditions throughout the country; but other than producing statistical and spatial knowledge on the uneven production patterns and wealth of rural areas, it had no practical outcome. It would be impossible to replace the locally based approach followed by the Ministry, which was guided by extensive surveys completed during the war and cross-referenced with field research coordinated by local offices. However, the study attested to the 'financialization' of the recovery project, under pressure to increase the percentage of the domestic funds directed to the reconstruction of housing.

In spite of these demands, Doxiadis did not retreat from the main principle that the State was responsible for providing low-cost housing 'cores' as an act "of social policy […] comparable to the distribution of food and other needed goods, whose utility and justification was unquestioned."[247] What changed eventually was the role of the State and the utilisation of non-monetary elements in the reconstruction process. In the new "first large-scale experiment,"[248] as Doxiadis described this approach, the State would minimize its economic support but increase its presence in the process by provide technical assistance (plans,

246 C. Doxiadis, Preface, in Υπουργείο Ανοικοδομήσεως - Διευθύνση Γεωργίας, *Αγροτικόν Εισόδημα και Ανοικοδόμησις [Rural income and reconstruction],* Σειρά εκδόσεων του Υπουργείου Ανοικοδομήσεως, 34, Αθήνα: Υπουργείο Ανοικοδομήσεως, 1948, 1.

247 *Ibid*, κβ.

248 See Doxiadis memo to Vafeadis and Vellidis on 12 April, 1948. Archive files 21960, Doxiadis Archives.

consultancy, and support) to help rural families continue expanding their homes and to provide material at rates lower than the market. Simultaneously, rural families would be expected to provide free labour, because Doxiadis claimed that the average Greek farming family worked in the fields no more than 107 days. Using what seemed to be abundant free time for the construction of houses and other community buildings could be, according to Doxiadis, the rural families' "truly substantial contribution to the reconstruction of the country."[249] Tapping what was assumed to be voluntary unpaid and surplus labour became the main strategy for offsetting the lack of State capital investments.

The housing 'cores' solution, or 'nuclei', which the Ministry's provided at the time, already assumed the inhabitants' own involvement in the future extension of their houses. Unaided self-help housing methods (αυτοστέγαση), were also used in remote areas by providing free materials and leaving construction up to the people.[250] Within the economic priorities set after the arrival of the American Mission, that strategy was normalized and extended into an extensive self-help housing program, which became the Ministry's principal approach to rural reconstruction at the end of the 1940s.[251] With agricultural production gradually reaching pre-war levels, even during the continuing Civil War, the idea of employing private initiative and income in the reconstruction program seemed morally more justified.[252] The rural family, much like the village, was a category expressing no class, gender or ideological characteristics, and it was expected to offer its' income and 'free' time to compensate for the lack international and domestic capital. Self-help housing appropriated formal and informal elements of the Greek economy and society and incorporated them within post-war international economic logic.[253] This was one of the early post-war experiments with self-help

249 C. Doxiadis, Preface, in Υπουργείο Ανοικοδομήσεως - Διευθύνση Γεωργίας, *Αγροτικόν Εισόδημα και Ανοικοδόμησις [Rural income and reconstruction],* Σειρά εκδόσεων του Υπουργείου Ανοικοδομήσεως, 34, Αθήνα: Υπουργείο Ανοικοδομήσεως, 1948, κγ.

250 See the unfinished "Account text for the Ministry for Reconstruction" [In Greek]. Archive files 21960, Doxiadis Archives.

251 See also the analysis by L. Theodosis. *Victory over Chaos? Constantinos A. Doxiadis and Ekistics 1945-1975* (PhD dissertation, Universitat Politècnica de Catalunya. Departament de Teoria i Història de l'Arquitectura i Tècniques de la Comunicació, 2016), p. 96.

252 Agricultural production increased covering mostly domestic needs rather than exports. See, G. Stathakis, *Το Δόγμα Τρούμαν και το Σχέδιο Μάρσαλ : Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece] (*Αθήνα, Βιβλιόραμα, 2004), pp. 263-264.

253 See an in-depth analysis on self-help projects in the Third World in, I. M. Muzaffar, *The Periphery Within: Modern Architecture and the Making of the Third World*. (PhD dissertation, Massachusetts Institute of Technology, 2007).

housing in Europe. In the next decades, this method would be institutionalized by international organizations in Third World missions and led to, as Muzzafar persuasively argued, the establishment of '[a] quintessential mode of development intervention that bypassed restriction of capital investment while facilitating incorporation into global finance through land reform, property tenure, and loan mechanisms."[254]

Retreating from his early aspirations for the State to be the main provider of housing to the war-torn society, Doxiadis became aligned with the American mission's economic policy. Self-help housing was considered much more successful than State-built housing 'cores'. As the architect John Papaioannou, a close collaborated and friend of Doxiadis, argued in retrospect, self-help housing was seen as a collective form of reconstruction process that fostered social cohesion and ultimately allowed diverse architectural responses according to each family's financial capacity. It diffused technical skills to younger generations and offered a much wider range of adaptations to local socio-cultural particularities.[255] Among the proclaimed achievements of the self-help housing program was that it brought together rural people and experts in the field, making it an ideal vehicle to propagate the ideological and geopolitical mission of American aid to Greece, which connected the rebuilding of the country with a 'hearts and minds' campaign to win over the peasants.

2.5 Cold War politics in the Greek countryside

The American-led recovery program had a civil and a military component; but the goal was the same: to eradicate "communist" influences, either by fighting the forces of the National Liberation Front in the mountains or by helping underprivileged Greeks. In the context of the Greek Civil War, the fact that the differences between military and civil goals became even more vague, as additional responsibilities were assigned to the reconstruction experts. In this light, the reconstruction of rural housing and villages was not only urgent for restoring agricultural production, but was considered imperative for rehabilitating war refugees and making palpable the social and cultural changes brought about by the recovery program.

254 *Ibid*, p. 26.

255 J. Papaioannou, Μέρος I [Part I], *Η Κατοικία στην Ελλάδα: Κρατική δραστηριότης [Housing in Greece: State's Activity*] (Athens, Technical Chamber of Greece, 1975), p. 28.

During the Civil War, the reconstruction of rural areas was more challenging, not only because focal areas for the program were less accessible, but also because there were significant population movements, some caused by targeted evacuations by the governmental National Army as a way "to starve out the guerrillas."[256] The number of so-called "guerrilla-stricken refugees" [ανταρτόπληκτοι -συμμοριόπληκτοι] increased from 280.000 to 600.000 in June 1948 causing a dramatic increase in social welfare costs while making military aid a priority as the Americans and the Greek government continued efforts to keep the State budget balanced — mainly by increasing taxes.[257] Aiming to highlight this contradiction, Doxiadis published articles in the newspaper "To Vima", where he would stress how the militarization of the country and the economy burdened limited family incomes and constrained further private investment in reconstruction. Speaking to "Greeks and foreigners" he called for more support and financial aid to help the country face the "new problem" which (he claimed) required new understanding and solutions on a supra-national level. It is in Greece, he stated "where the politics of an entire world are now tested. Unfounded experimentation cannot be allowed, because the failure would be tragic to the Western world, and fatal for Hellenism."[258] Doxiadis' pleas to increase assistance for the country's Reconstruction came at crucial moment, when the volume of American aid was being negotiated regarding the transition to the European Recovery Program under the Marshall Plan. Contemplating these negotiations, which were expected to define the country's future development, Doxiadis stressed the priority of rural reconstruction, proposing it also "as a way to encourage the fighting population in the dangerous zones of the country."[259]

Doxiadis' articles resounded in US Cold War discourse, even as his words can also be understood as a strategy for winning continued support. At the end of the 1940s, his program

256 M. Mazower, "Introduction", in *After the War was Over: Reconstructing the Family, Nation, and State in Greece, 1943-1960* (Princeton, Princeton University Press, 2016), p. 7.

257 G. Stathakis, *Το δόγμα Τρούμαν και το Σχέδιο Μάρσαλ: Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece]*, (Αθήνα, Βιβλιόραμα, 2004), p. 181.

258 Doxiadis translated his articles in English and sent them to key people in the American Mission both in Greece, and in Washington. See C. Doxiadis, Η σημερινή μας Κατάσταση: και Λύσεις Νέαι [Our present Situation: and New Solutions] *To Vima,* 20 April, 1948, (Signed as "Ειδικός Συνεργάτης" [Special Collaborator]. Archive files 21960, Doxiadis Archives [In Greek]

259 See the unfinished "Account text for the Ministry for Reconstruction" [In Greek], 9. Archive files 21960, Doxiadis Archives.

was among those receiving the highest funding[260] and absorbing the most American aid as imports of building material and equipment.[261] The housing program was even praised by Hoffman, head of the entire ECA, during his visit in 1949, when he officially expressed the low-priority for industrialisation projects, urging instead that the country focus more on refugee rehabilitation and suggesting that such policies could be more effective in changing the "communist" mind-set.[262] Along these lines, US President Harry S. Truman would state in 1950, that "poverty, misery, and insecurity are the conditions on which Communism thrives."[263] Even after the military goals were achieved, the Reconstruction program was still important for US missions because it offered the conditions to go directly "to the peasant or the villager…and talking to him directly in his own tongue" and that was perceived at the time as the most effective way to push back the "communist" threat permanently.[264]

Precisely at this point, American housing experts and agriculturists became actively involved in rural Greece, aspiring to make evident the benefits of Greek-American economic cooperation in the country's modernisation. Doxiadis' efforts to make housing a priority in reconstruction agendas received the support of the architect Jacob Crane at the Housing and Home Finance Agency (HHFA) in Washington, who had already set up programs for owner-built homes in Puerto Rico in 1939. Crane sent housing advisor George Reed to Athens in 1947 and together with his deputy George Speer[265] became involved in the Ministry's

260 In 1948-49, expenditure on housing amounted to 30% of the entire reconstruction program. See G. Stathakis, *Το δόγμα Τρούμαν και το Σχέδιο Μάρσαλ: Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece] (*Αθήνα, Βιβλιόραμα, 2004), p. 293.

261 According to Reed and Speer the reconstruction of housing absorbed almost 10 million dollars in material and building supplies and equipment during the first two years of the Marshall Plan, G. Speer and G. Reed, "Unbeaten Greece Attacks its Housing Problem", *Journal of Housing*, 7 (1950), pp. 97-100.

262 See G. Stathakis, *Το δόγμα Τρούμαν και το Σχέδιο Μάρσαλ: Η Ιστορία της Αμερικανικής Βοήθειας στην Ελλάδα [The Truman doctrine and the Marshall Plan: The History of the American Aid in Greece]*, (Αθήνα, Βιβλιόραμα, 2004), p. 330.

263 Cited in N. Sackley, "The Village as Cold War Site: Experts, Development, and the History of Rural Reconstruction" *Journal of Global History,* 6, 3 (2011), p. 490.

264 Truman thought that 'communists' influenced the peasant by talking "to him directly in his own tongue" and in a way he advocated that western experts should also follow a locally based approach to achieve the same influence. See *Ibid*, p. 491.

265 See for example, R. Harris, "The Silence of the Experts: "Aided Self-Help Housing," 1939–54", *Habitat International,* 22, 2 (1998), pp. 165–189; R. Harris, "Slipping through the Cracks: The Origins of Aided Self-Help Housing 1918–1953", *Housing Studies,* 14, 3 (1999), pp. 281–309.

reconstruction program in rural areas connecting the program's success to a symbolic victory against the defeated communists.[266]

The strategies employed by these housing experts were already deeply embedded in United Nations 'humanitarian' expertise. The 1947 FAO survey for Greece proposed broad guidelines for the country's agricultural development, and like Doxiadis', they aspired to the "raising [of] the standard of living among the masses of the population."[267] The "masses of the population" were none other than the rural population and, as the FAO's report emphasized, their development could not be achieved by imposing any solutions "from above". Instead, it required initiating process of "educating" people to "democratic" processes through the cooperation of experts and locals: "It is a simple, but often neglected, principle of helping an individual to help himself and granting him the freedom [sic] to do so […] The method is inevitably slow in bringing results, but they are relatively permanent and safe. The only alternative is that of telling the farmer what to do from above. This approach is blind to certain fundamentals in human nature, and it blocks the way to spontaneous and continuous development that involves a minimum of frustration."[268] Not only was aided "self-help" seen as an economic strategy addressing the country's serious lack of funds, but it was also promoted as a tactic for turning aid-recipients into contributors to the aid process. Both American experts' and Doxiadis' agendas advocated communitarian politics as key to achieving the social, economic and political goals of the Reconstruction project. According to American housing advisor George Speer, Greek villagers became engaged in building the 'housing nuclei' already designed by the Ministry's engineers, and the village priests and schoolteachers became responsible for keeping and interpreting the extension drawings for future use. Within the aided self-help program, he continued, "almost a million Greeks

266 Speer asked, "Can the communist be defeated and the rural areas be rehabilitated in time to save Greece?" See G. Speer, "From Greek devastation have come new homes via "aided self-help" [story of the rural village rebuilding program, since 1949]", *Journal of Housing*, 10 (1953), pp. 51-56; See also G. Speer, Rebuilding 2,100 Greek villages [methods of financing and reconstructing villages destroyed during World war II]. *Department of State Field Reporter*, Mar.-Apr. 28-31.1953, 1953.

267 Food and Agriculture Organization of the United Nations*, Report of the FAO Mission for Greece,* Washington: The Organization, 1947, p. 149.

268 *Ibid.*

learned first-hand that democracy pays […] now they are no longer hopeless and no longer potential Communists."[269] **(Fig. 2.4)**

In this context, housing and community planning were seen as central to the management of socio-political crises. As spatial strategies, they could not only articulate short-term and long-term priorities, but also express them in the most tangible way. The reconstruction project supported by American aid was no longer offering the path to a prosperous future, but was actually providing architectural protocols for its suspension. These protocols were expressed in the very idea of an "expandable house" whose completion was postponed to an undetermined future moment. In this sense, the growing house would become the interface of internal and external forces, subject both to family dynamics and broader social, cultural and economic changes which defined the speed of change on a family scale. And as the house was extending, presumably following the guide-plans left behind with schoolteachers and priests, the communitarian politics of the self-help program were perpetuated even after the experts had left the scene. **(Fig. 2.5)**

"Aided self-help on this scale had never been seen before. A trail had been blazed for all the world to follow", Speer stated prophetically. In the mid-1950s US experts and policy makers would become preoccupied with extensive self-help housing projects and community development in India and Pakistan and in the 1960s-70s architectural and developmental agendas advocated for inhabitants' participation in home and community building in the Third World.[270] The importance of the Greek post-war case is not due only to the fact that it created a large-scale historical precedent for what later became an institutionalised international developmental agenda. It also sheds bright light on the intricate ties between architectural strategies, financial agendas and geopolitics. Although the anti-communist agenda behind the Reconstruction projects was not really concealed, in the aftermath of the Civil War, the Greek government's punitive measures against the Left even raised Americans'

269 See G. Speer, "From Greek Devastation Have Come New Homes via 'Aided Self-Help' [Story of the Rural Village Rebuilding Program, since 1949]", *Journal of Housing*, 10 (1953), p. 56

270 See for example, P. Ward, Self-Help Housing Ideas and Practice in the Americas, in B. Sanyal, L. J. Vale, and C. D. Rosan, eds., *Planning Ideas That Matter: Livability, Territoriality, Governance and Reflective Practice* (Cambridge, Massachusetts, MIT Press, 2012), pp. 283-310; P. Ward, ed., *Self-Help Housing: A Critique* (London, Mansell, 1982); H. Harms, "Limitations of Self-Help", *Architectural Design,* 46, (1976); H. Harms, "Historical Perspectives on the Practice and Politics of Self-Help Housing", in P. Ward, ed., *Self-Help Housing*: *A Critique* (London, Mansell, 1982), pp. 17–53.

concerns and suggestions for offering amnesty to former guerrilla forces.[271] In this context, there was an irony in the suggested role of the ongoing reconstruction projects as post-conflict, reconciliatory processes, since the proclaimed social unity was disrupted by the criminalisation of political opposition, internal exile, island camps, and a social polarisation that lasted for many years.[272] Under the contested assumption that village populations were inherently apolitical, Doxiadis might even have expected that, more or less, uniform landscapes of reconstructed houses and rural settlements would emerge as the new social, cultural and economic centres of a unified and modern Greek society. Then again, it was these villages and broader rural regions that were subject to an intense nationalist, anti-communist propaganda advanced by the State and the reinstated Royal family.[273] In this politically charged environment, which influenced rural-out migration, the rebuilding of villages and housing alone[274] was not enough to reverse the accelerated urbanisation that ensued in the succeeding decades; to reinvigorate agricultural production or to prevent the emigration of Greek population in Western Europe, USA and Australia in search of a better living .[275]

In May 1948, Doxiadis left the Ministry of Reconstruction, because he was assigned a new post as Coordinator of the entire recovery program at the Greek Recovery Program Coordinating Office (GRPCO) [Υπηρεσία Συντονισμού της Εφαρμογής του Σχεδίου Ανασυγκροτήσεως (ΥΣΕΣΑ)] under the Ministry of Coordination. He also became a member of the Higher Reconstruction Board [Ανώτατο Συμβούλιο Ανασυγκροτήσεως (ΑΣΑ)]. From these positions, he continued to strongly defend his agenda for a nationwide housing program even over other developmental priorities, such as industrialization, which still

271 US President Truman: The Greek Government had been "unnecessarily brutal in punitive measures" against the left and that the USA "has some responsibility to restrain these", Cited in G. Politakis, *The Post-War Reconstruction of Greece: A History of Economic Stabilization and Development*, *1944-1952* (New York, U.S.A., Palgrave Macmillan, 2018), p. 229.

272 See for example P. Voglis, *Becoming a Subject: Political Prisoners During the Greek Civil War* (New York, U.S.A., Berghahn Books, 2002).

273 The royal family had been reinstated in 1946. For nationalist politics after the Civil War, see A. Karakasidou Protocol and Pageantry: Celebrating the Nation in Northern Greece, in M. Mazower, ed., *After the War was Over: Reconstructing the Family, Nation, and State in Greece, 1943-1960* (Princeton, Princeton University Press, 2016), pp. 221-247.

274 By 1951, the implementation of planned housing 'nuclei' had reached 63% and 66% of planned repairs, See A. Yerolympos, Πόλεις και Εθνικός Χώρος σε Κατάσταση Πολιορκίας (1945-1952) [Cities and National Space in Siege], in Ch. Hadjiiosif, ed., *Ιστορία της Ελλάδας του 20ού αιώνα, 1945- 1952 [History of Greece in the 20th Century, 1945-1952]* , (Αθήνα, Βιβλιόραμα, 2009), pp. 157-182.

275 According to Hadjimichalis: "[The] mechanization in agriculture, poor rural living conditions and the new road system resulted in accelerated urbanization" See C. Hadjimichalis, *Uneven Development and Regionalism: State, Territory and Class in Southern Europe* (London, Croom Helm, 1987), p. 109.

enjoyed wide constant support.[276] However, Doxiadis' early aspiration to double housing production from pre-war levels through State mechanisms had already been circumscribed by tight economic policies and by the increasing politicization that kept the Reconstruction program focused on refugee rehabilitation. This special focus was also evident in the main publication of the Office coordinated by Doxiadis. Struggle for Survival [Αγών Επιβιώσης] was a weekly bulletin which had a distinctly propagandistic role; that of juxtaposing images from Reconstructed projects, such as reconstructed bridges and settlements, with images of the 'victims' or of the Civil War, long after it had ended. **(Fig. 2.6 & 2.7)**

Through these activities, Doxiadis was considered by the Left as a "yes-man" who used "scientism" and "idealised projections" to distort economic reality, and to promote the Marshall Plan's ambivalent goals and his own "self-advertising."[277] His efforts to promote his own agenda by negotiating the shifting priorities among Greek and foreign actors, didn't leave him unaffected, as he was abruptly removed at the end of 1950. His permanent post in the civil service was abolished as part of an extensive restructuring of government agencies responsible for coordinating and implementing the Reconstruction program under the Marshall Plan, which was coming to a close.[278]

276 Politakis claims that during discussions in the Higher Reconstruction Board Doxiaids tried to keep housing reconstruction as a priority by threatening to expose the inconsistencies of the Long-Term Five Year Plan (1948-52) and even "called for resistance to US influence" regarding the exaggerated emphasis on industrialisation. G. Politakis, *The Post-War Reconstruction of Greece: A History of Economic Stabilization and Development*, *1944-1952* (New York, Palgrave Macmillan, 2018), p. 206.

277 See A. Yerolympos, Πόλεις και Εθνικός Χώρος σε Κατάσταση Πολιορκίας (1945-1952) [Cities and National Space in Siege], in Ch. Hadjiiosif, ed., *Ιστορία της Ελλάδας του 20ού αιώνα, 1945- 1952 [History of Greece in the 20th Century, 1945-1952]*, (Αθήνα, Βιβλιόραμα, 2009), pp. 157-182.

278 The Ministry for Reconstruction was abolished in 1951. Planning and reconstruction affairs were transferred to the Ministry of Social Welfare and in 1953 to the Ministry of Public Works.

3 The village as model for Third World modernization

3.1 From Greece to the Third World

Greece's post-war recovery program offered Doxiadis not only an extensive field for experimentation and application of the Ekistics framework, but also permitted affirming and revising some of Ekistics' goals and premises. His direct involvement in reconstruction projects between 1945 and 1950 took many forms. He tried to influence the intellectual climate and debates between architects, engineers, economists and politicians. He played a key role in the setting of the institutional framework (bodies, legislation) which formed the basis for much of the State-led Reconstruction projects in housing and settlement planning in Greece. He coordinated interdisciplinary groups of experts that focused on the production and systematization of knowledge about the country's settlement and housing needs and, finally, he had a critical role in negotiating among different economic agendas and geopolitical priorities promoted by local and foreign actors. Through these different ventures, Doxiadis formulated some of the principles of Ekistics. As Greece's Reconstruction was also a site of experimentation with economic and planning policies, Doxiadis also took part in the shaping a transnational planning culture aligned with Cold War priorities, global financial agendas and the particularities of a non-industrialised world. In a way, he was following the decisive change of the overall frame and scale of the development project which took place when international aid and Cold War politics moved from Europe to the Third World.

It is within this context that, when Doxiadis returned to action after a brief two-year 'recovery' of his own in Australia,[279] he became much engaged with international projects in rural areas. Working in a transnational context, and as the head of the newly found Doxiadis Associates (DA), he would not only encountered new local and planning traditions but also found the opportunity to promote Ekistics to an international professional audience at a time when

279 For Doxiadis' two-year venture in Australia, See, A. Kyrtsis, *Constantinos A. Doxiadis: Texts, Design, Drawings, Settlements* (Athens, Ikaros, 2006), pp. 355; and D. Philippides, *Κωνσταντίνος Δοξιάδης. Αναφορά στον Ιππόδαμο [Constantinos Doxiadis. Reference to Hippodamos]* (Athens, Melissa, 2015), pp. 16-17.

housing was being introduced into UN humanitarian and developmental plans to 'fight' world poverty.[280]

3.2 The politics of village planning

In the end of the 1950s, the Marshall Plan's inadequacies to transform traditional economies into industrialized states, led US social scientists and policy makers to reconsider the suitability of economic measures for promoting overall social and economic change. Challenging the presumed rationality of human actions—a central feature of neoclassical theories to which Doxiadis had also subscribed in the mid-1940s—advocates of modernization theories would instead highlight cultural and social values as drivers of social action, while contemplating the "non-rational aspects of motivation."[281] Drawing on these theoretical advances, Western experts and policy makers would approach the decolonized nations through binary thinking by highlighting the 'essential' differences between modern (Western) and traditional (Third World) societies while conceptualizing Third World economies as split between modern and traditional sectors, in a "dual economy" model.[282]

By criticizing the limitations of "economic or technical attacks on the problem of persistent poverty,"[283] modernization theorists expanded and reinforced development discourse, renewing the faith that combating world problems could presumably come to a better understanding of the specific conditions in non-Western societies. The emphasis on non-economic factors would bring to the foreground the role of tradition in the modernization processes. The broader questions asked at the time, following the binary thinking model explained above, were: Are traditional values an obstacle to modernization and development and, what "political danger[s] lurked in the social disorganization that accompanied the transition from tradition to modernity[?]"[284] While others saw tradition as incompatible with

280 In 1951, the UN established the UN Housing and Town and Country Planning (HTCP) which was later renamed the Centre for Housing, Building and Planning.

281 For a detailed analysis of these theoretical advances, which relied primarily on the work of sociologist Talcott Parsons, see N. Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore, JHU Press, 2003), p. 81.

282 The "dual economy" model is attributed to the economist Arthur Lewis. See A. Lewis, "Economic Development with Unlimited Supplies of Labour", *The Manchester School,* 22, 2, (1954), pp. 139-191.

283 See Gilman, Nils. *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore, JHU Press, 2003), p. 83.

284 See N. Sackley, "Cosmopolitanism and the Uses of Tradition: Robert Redfield and Alternative Visions of Modernization during the Cold War", *Modern Intellectual History* 9, 3 (2012), p. 586.

modernity, others saw its potential for promoting socioeconomic change, advocating that tradition could help "stabilized the passage to modernity."[285]

These discourses expressed an ambivalence over modernization processes, their goals and speeds in the Third World, and placed the management of tradition, which was associated with the rural areas, at the centre of three ongoing, and overlapping, geopolitical transformations: There was the US' Point Four technical assistance program, announced by Truman in 1949, which divided the world into developed and 'underdeveloped' areas and promoted global economic and anti-communist agendas in Third World countries. These agendas would be promoted towards the newly-founded states in Asia. However, in most of Africa, late-colonial politics promoted 'villagisation' politics in the name of modernization and development aiming also to suppress the mobilization of the peasantry in anti-colonial movements (as in Kenya and Algeria).[286] Finally, there was the emerging project of national independence and the early efforts to shape a non-aligned movement, that aspired to tie decolonization with nation-building and socio-economic development. Under these ongoing and often competing trajectories of modernization and developmentalism, architects and planners became increasingly involved in transnational projects for self-housing and community building.

India's independence in 1947 and the announcement of its first Five-Year Plan in 1952 brought forward these broader debates and provided a testing ground for their appraisal. The Plan attempted to merge two relatively competing development visions. Gandhi's view of India as "an imagined nation of self-sufficient villages", which considered traditional settlements essential to the country's future development, contrasted with Prime Minister Jawaharlal Nehru's vision of modern industrialization. As Gupta emphasizes, India's planners believed industrialisation would raise demand for agricultural goods; so they focused more on raising agricultural productivity through institutional changes, land reforms, village governance and community building.[287] India launched a nationwide village development program directed to its vast countryside along with large-scale water/energy infrastructures

285 *Ibid*, p. 587.

286 See F. Cooper, *Africa in the World*: *Capitalism, Empire, Nation-State* (Cambridge, Massachusetts & London, Harvard University Press, 2014), p. 62.

287 A. Gupta, *Postcolonial Developments: Agriculture in the Making of Modern India* (Durham, London, Duke University Press, 1998), p. 49.

and industrialisation, with US technical assistance. US policymakers saw the Asian country's turn to rural development as a first-rate opportunity to showcase the Point Four program and to demonstrate how a "'democratic', grass-roots development" could form a large-scale alternative to China's communist agrarian reform and "top-down Soviet methods of forced agricultural collectivization."[288] Moreover, the country's separation from Pakistan in 1947, which resulted in exchanges of millions of population and created vast food and housing needs, got the attention of the newly founded UN Housing Town and Country Planning section (HTCP) which sent a planners' mission in 1950 to report on the situation. [289]

Headed by Jacob Crane, this mission visited countries of South and South-East Asia surveying conditions of housing and its results were dramatic: "[M]ore than 100,000,000 Asian families (perhaps as many as 150,000,000) at present live in crowded, unsanitary, substandard quarters, urban or rural."[290] Highlighting the magnitude of the Asia's housing problems as paradigmatic of challenges faced in other parts of the world, albeit on a smaller scale, this report was instrumental in creating a planning discourse dedicated to the study of housing crises as a transnational phenomenon. In line with the social sciences' current critiques of economic planning, the report emphasised the "fallacy […] that better housing follows economic development automatically", underlining the exact opposite: that "most industrial developments in Asia have resulted in awful slums areas."[291] The report suggested that, not only was the housing problem of low-income populations a transnational large-scale phenomenon, but economic planning — by ignoring social considerations — itself contributed to the problem. Evoking the image of a perpetual landscape of low-income populations living in unsuitable housing conditions spanning urban and rural areas in various

288 N. Sackley, "The Village as Cold War Site: Experts, Development, and the History of Rural Reconstruction", *Journal of Global History,* 6, 3 (2011), p. 492. See also, N. Cullather, *The Hungry World: America's Cold War Battle Against Poverty in Asia,* (Cambridge, Massachusetts & London, Harvard University Press, 2010), pp. 72-108.

289 The mission team included, Jacob L. Crane, Assistant to the Administrator, United States Housing and Home Finance Agency; Jacobus P. Thijsse, University of Indonesia, Bandung; Robert Gardner-Medwin, Chief Architect and Planning Officer, Department of Health for Scotland, Rapporteur; and Professor Antonio C. Kayanan, Chief Planner, National Urban Planning Commission of the Philippines. See also R. Gardner-Medwin, "United Nations and Resettlement in the Far East", *Town Planning Review* 22, 4 (1952), p. 283; O. Koenigsberger, "Low Cost Housing in South and South-East Asia", *Planning Outlook*, 2, 3 (1951), pp. 17-23.

290 J. Crane et. al., *Low Cost Housing in South and South-East Asia*, Report of Mission of Experts, 22 November 1950-23 January 1951 (United Nations, Department of Social Affairs, New York, 1951), p. 3.

291 *Ibid*, p. 7.

contexts, the report delineated an emerging field of planning expertise on an international scale.

The report emphasized that, due to the magnitude and complexity of these problems, "it has to be realized that no magic formula exists."[292] As Muzzafar shows, this statement was not an affirmation of the complexity of the problem, but an indication of the 'real' formula UN experts offered local technocrats and governmental officials in response to their requests for funding. They offered technical assistance; more research and systematisation of knowledge; advice on combining economic planning with social development; programs for professional training and education; surveys of low-cost housing solutions and suggestions for alternative financial solutions beyond restrictions of international aid and national budgets, eventually outlining an "alternative political economy" for the Third World.[293] The mission concluded that "there are immense possibilities for improving housing in South and South-East Asia within present resources" and revealed that the only formula was ultimately low-cost housing solutions that could be implemented through "aided self-help" programs. The report was essentially reaffirming what was by now a firm belief in US/UN circles that "aided self-help can do more to reduce money cost and to achieve higher standards than any other combination of finance and technology."[294]

The policies employed by US and UN missions in Greece during post-war Reconstruction of the countryside were revisited in South-East Asia in the form of an international vision for housing relief for refugees as well as rural Third World populations. This mission was decisive in directing experts' attention not only on refugee problems and urban 'slums' but also on rural areas by emphasizing the extremely large percentage of the rural population in the region (85%), and making the broad generalisation, that "[b]y and large a great many villages in South and South-East Asia are slums."[295] At the same time, it showed the potential for focusing on villages as a source for inspiration for devising self-help, low-cost housing projects. By praising some pilot schemes promoted by the Indian authorities,'[296] the report,

292 *Ibid.*

293 I. M. Muzaffar, *The Periphery Within: Modern Architecture and the Making of the Third World* (PhD dissertation, Massachusetts Institute of Technology, 2007), p. 50.

294 J. Crane et. al., *Low Cost Housing in South and South-East Asia*, Report of Mission of Experts, 22 November 1950-23 January 1951 (United Nations, Department of Social Affairs, New York, 1951), p. 5.

295 *Ibid*, p. 9.

296 The site visited was in Etawah, the so-called Agragami ("forerunner") or Indian architect Fayuzzudin, *Ibid*,

saw villages as repositories of voluntary labour; low-cost traditional materials and building methods which could be improved "in conjunction with self-help building and development of local materials, including agricultural and industrial waste products for low-cost housing."[297] Highlighting that the extremely low-income rural population could not afford the standard two-room house often proposed as a solution by Western architects, the mission presented self-help housing not only as the only available solution but also as a form of slow-paced modernisation where "self-help building [was] the only hope until the vital new roads are built and irrigation, reclamation and mechanization get under way."[298] Since capital was not available for large-scale infrastructure projects that could restructure the rural economy, the mission advocated "that village housing and community development can be improved with the present economy" in combination with low-cost policies to improve "agriculture, health and education."[299]

While cost reduction was a key priority for Crane's mission, used as a guide to develop a technocratic, managerialist approach to an emerging international problem, it was also informed by other, parallel political agendas. The slow-paced improvement of the rural areas through self-help programs (in anticipation of modernization), embraced by the report as a community development project, was infused both with US/UN agendas for "grass-roots development" and the Indians' nation-building rhetoric. The gradual 'improvement' of living conditions suggested that 'development' could take place without disrupting existing social, cultural norms — facilitating change, without risking social disorganisation. Community development and voluntary self-help programmes — proposed as an alternative to Chinese and Soviet agrarian visions — were also consciously linked to Patrick Geddes' planning legacy in 1920s India. Geddes' work in India was presented as a 'successful' model of western expertise in the Third World, precisely because his "organic" planning approach were seen to derive from an extensive knowledge and appreciation of local social and environmental conditions. Perceived as an alternative to the western, modernist top-down planning practices of slum-clearance his work was seen to offer a useful lesson for the local-based and

p. 10

297 *Ibid*, p. 79.
298 *Ibid*, p. 66.
299 *Ibid*, p. 79.

low-cost strategies envisaged by this mission.[300]

Geddes appeared frequently in Crane's 1951 report as a connecting link between Western planning legacies and their successful Indian adaptations. In the same way, it served as a powerful inspiration for Jaqueline Tyrwhitt in organising the 1954 United Nations Seminar on Low-Cost Housing and associated exhibition in New Delhi.[301] Commissioned by UN-HTCP's head, Ernst Weissmann, also a CIAM member, Tyrwhitt organized a transnational exchange of knowledge on low-cost housing. Parallel to the workshop (to which Crane and Doxiadis were both invited, along with many other western and Asian prominent architects and planners working in the South), Tyrwhitt advised the Indian government on organising an exhibition on experimental models of low cost housing tested by various Indian government agencies, along with many other exhibits.[302] The centrepiece of the exhibition, "The Village Centre", was Tyrwhitt's own creation and differed from the rest of the exhibits as it served as a prototype for an Indian village to support Indian government's community development projects. To make the connection even stronger, the Village Centre featured a replica of Gandhi's hut, "a structure of earth and bamboo" which, according to Tyrwhitt, was more successful than other exhibits as it "demonstrated an Indian way to solve the housing problem economically."[303] Tyrwhitt, who was a strong advocate of self-help housing movement, used Gandhi's hut—a shrine to the Indian leader who was assassinated in 1948—to create a powerful rhetoric of an alternative 'modernity' for India and the Third World: one founded on locally based solutions and the human-environment relationship as manifested in rural

300 For a critique on Geddes work in India see for example N. Khan, "Geddes in India: Town Planning, Plant Sentience, and Cooperative Evolution", *Environment and Planning: D,* 29, 5 (2011), p. 840; M. Beattie, "Sir Patrick Geddes and Barra Bazaar: Competing Visions, Ambivalence and Contradiction", *The Journal of Architecture* 9, 2 (2004), p. 131-150.

301 Tyrwhitt also organized another conference on roughly the same dates: for the International Federation for Housing and Town Planning: South East Asia Regional Conference. See the details of Tyrwhitt's assignment. E Shoshkes, *Jaqueline Tyrwhitt: A Transnational Life in Urban Planning and Design* (Farnham, Surrey, Ashgate, 2013), p. 155-156.

302 The exhibition included "70 full-size urban and rural demonstrations houses for low-income groups; the village centre buildings; smaller halls with extensive displays of building materials, tools, equipment and construction techniques; a large hall with scale models, plans, etc. of low-cost houses from many countries accommodating at the same time the United Nations seminar sessions; a number of commercial exhibition stands; an open air theatre and an amusement park." See J. Tyrwhitt, "The International Exhibition of Low Cost Housing, New Delhi", *Tropical Housing & Planning Monthly Information Bulletin*, 3, 18 (February 1957), p. 47; J. Tyrwhitt, 'Many problems in the Evolution of the Ideal Village,' *The Statesman,* Archives of the Royal Institute of British Architects, London (hereafter RIBA), Jaqueline Tyrwhitt collection, TyJ 39/2.

303 J. Tyrwhitt, "The International Exhibition of Low Cost Housing, New Delhi", *Tropical Housing & Planning Monthly Information Bulletin*, 3, 18 (February 1957), p. 47.

villages. The Village Centre was meant to demonstrate Gandhi's counter-industrial vision, in which Indian villages were imagined as "self-contained" manufacturing units. Agriculture would be the main activity taking place in the fields outside the village, but workshops (for potter, carpenter, smith and weaver) were also included, both for their supporting role in self-help housing and as an additional income source. Modern techniques and tools were also accepted as long as they supported production for their own use and (following Gandhi's vision) did not lead to the exploitation of others. **(Fig. 3.1)**

The Village Centre promoted the idea that small Indian rural villages of 500 inhabitants could become self-sustaining by upgrading their living conditions. It proposed a series of small-scale modifications of existing living conditions, such as the separation of animal/human spaces, management and recycling of animal/human waste, water supply improvements and the introduction of community facilities (e.g., health clinic, school, etc.). Drawing heavily on Patrick Geddes' social-environmental planning experiments in 1920s India, Tyrwhitt's Village Centre introduced social and environmental concerns into self-help, low-cost housing architectural discourses.[304]

3.3 The politics of low-cost housing

In its micro scale, Tyrwhitt's village was the model for India's villagisation campaign, promoted in the name of postcolonial independence. In this model, empowered, self-contained communities were seen introducing technology into a primitive economy "still with a very full range of social obligations and customs."[305] As a form of agrarian 'modernisation' it was understood not merely as a practice of improving rural areas that had been ignored by colonial policies. It was also interpreted as a strategy for building rural societies' autonomy against global market forces and their urbanisation drive. As Nolan showed, Tyrwhitt's collaborations with Marshall McLuhan, in the early 1950s, had informed the latter's formulation of the global village, which projected the idea of a world connected via electronic

304 Among Tyrwhitt's students was John Turner, who became one of the most prominent advocates of self-help housing in Third World countries. Geddes was a key inspiration in his career. R. Chavez, J. Viloria and M. Zipperer, Interview of John F. C. Turner, World Bank, Washington D.C, 11 September 2000. http://siteresources.worldbank.org/INTUSU/Resources/turner-tacit.pdf, accessed 6 October 2018.

305 Cited in G. Nolan, "Quasi-Urban Citizenship: The Global Village as 'Nomos of the Modern", *The Journal of Architecture* 23, 3 (2018), p. 456.

media.[306] Similarly to Tyrwhitt's 'emancipatory' vision of locally based rural societies, McLuhan would also suggest that the introduction of modern media in rural societies could allow them to preserve 'traditions' in the midst of the expansion of global mainstream media.[307] Within a world becoming increasingly interconnected through electronic media and global economic networks, both visions advocated 'modernization' through tradition as a way of improving local conditions and supporting small-scale communities to preserve a level of self-government. Tyrwhitt's model village, perhaps inspired by McLuhan, would foster the intermixing of traditional and modern media:

> The mind requires more than information for its development and therefore in the open space before the school house, there is a low platform that can be used by the story-teller, acrobats, dancers and mummers. Upon it a screen can easily be erected and film shows given from travelling movie vans.[308]

But the ambivalence of these ideas could be found, not in the visions themselves, but in the processes they were mobilising. With a dose of socio-environmentalism, Tyrwhitt's model village was modifying the technocratic/managerialist approach of Crane's self-help housing visions; but it did not escape the same logic of the soft power of an alleged apolitical expertise: in Crane's case it was concealing its international economic and geopolitical development agendas, but in fact both relied heavily on the uneasy relation between the local State and the 'voluntary' participant subjects/citizens. As Nolan argues, self-help housing processes "deliberately muddled this distinction between passive reception and active production,"[309] thus covering State politics and planner/experts' role in the processes. The way some 'traditions' were emphasized and universalised (e.g., self-help houses built with local materials) while others were considered unhygienic (e.g., human animal cohabitation) or in need of improvement (e.g., water supply, agricultural methods) shows the decisive role played by experts in deciding which features could change and which not, while people's participation was assumed to be voluntary — but also mute.

306 *Ibid.*
307 *Ibid.*
308 J. Tyrwhitt, Many problems in the Evolution of the Ideal Village, *The Statesman,* Archives of the Royal Institute of British Architects, London (hereafter RIBA), Jaqueline Tyrwhitt collection, TyJ 39/2.
309 See G. Nolan, "Quasi-Urban Citizenship: The Global Village as 'Nomos of the Modern", *The Journal of Architecture* 23, 3 (2018), p. 460.

It is precisely this idea of participatory processes that instrumentalised these strategies in 'voluntary' or coercive villagisation policies, pursued by different colonial and postcolonial states.[310] Colonial planners in British Malaya made an extensive use of the village form to create detention camps during the Communist Party's "anti-colonial insurgency", and these very ideas were transferred to Kenya, coupled with self-help housing practices and social services in the countryside, to prevent the political mobilisation of the rural population and cut ties to Kenya's Land and Freedom Army.[311] Not only were architects and planners exercising their power in programming social, cultural and economic changes, they were also offering that power to colonial/authoritative regimes as a tool of political legitimization.

This was the context in which Tyrwhitt's 1954 seminar was taking place, and issues of authority surfaced in the midst of what appeared to be a technocratic discussion on housing standards. The Village Centre was Tyrwhitt's main contribution to the transnational exchanges, manifesting her passion for Indian villages acquired through her admiration of Patrick Geddes work and her post-war planning experience in Britain, which led her to state: "First plan the community, then the house."[312] But her presence in the debates would be minimal, while discussions were centred on the technical problem of how to plan self-help programs that combined cost reduction while achieving 'better' living standards. Determining the cost was thought to be more manageable for a group of professionals, while the question of standards conspicuously blurred planning regulations, architectural values, and inhabitants' living conditions and begged a response to the question: *Low-cost housing: but on whose standards?*

3.3.1 On whose standards?

Doxiadis was invited to the Housing Standards and Community Improvement session (with Crane as a Chair), and his paper, titled, *Types and Densities of Housing Accommodation* offered a clear response to the above question. His speech was in tune with the UN's priorities

310 For an analysis of villagisation policies in different contexts, See J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Yale University Press, 1998, fn. 29), p.382.

311 See G. Nolan, "Quasi-Urban Citizenship: The Global Village as 'Nomos of the Modern", *The Journal of Architecture* 23, 3 (2018), p. 450.

312 See J. Tyrwhitt, "The International Exhibition of Low Cost Housing, New Delhi", *Tropical Housing & Planning Monthly Information Bulletin*, 3, 18 (February 1957), p. 47.

for self-help housing shaped by Crane's 1951-report — which he had already read — subscribing to the mission's call "to break down those prejudices and traditions (some of them European in origin) which are serious obstacles to the achievement of better housing with the available resources."[313] But Doxiadis was more confrontational, and he attacked both the "universality" and the "stability of standards" and underlined: "Our main efforts must be devoted to making more houses. The main problem must not to be obscured behind a mass of technical details. There are not sufficient financial resources and experienced men to tackle the problem in all its magnitude."[314] For Doxiadis, the preoccupation with standards only avoided facing the large-scale problem and wasted precious funds on piecemeal solutions; it was also an instrument for architects/planners and governments to interfere in "private affairs." [315] If the Government was not to be responsible for constructing houses, he repeated during the discussions, then the use of standards was simply "a police measure that can rapidly be brought into disrepute."[316]

Doxiadis' strong wording was directed at some of the high-profile Western architects and planners in the crowd, especially those who had responded to the housing crisis in colonial and newly-independent States by offering standardised (one- or two-room) houses that were ultimately inaccessible for the low-income population.[317] His comments and arguments presented a particular aversion to the architectural self-importance expressed by Maxwell Fry, who commented "[that] there is no formula you can make for this: all you can do is to think as an architect about it" and Jane Drew's opinion that indigenous populations also aspire to modern comfort and so "the last thing you should do is to try to follow or copy what was done by their parents or grandparents before them."[318] Perhaps he was mostly

313 J. Crane et. al., *Low Cost Housing in South and South-East Asia*, Report of Mission of Experts, 22 November 1950-23 January 1951 (United Nations, Department of Social Affairs, New York, 1951), p. 26.

314 See C. Doxiadis, Types and Densities of Housing Accommodation, Archive files 24965, Doxiadis Archive.

315 *Ibid.*

316 See Delhi Seminar on Housing and Planning for South East Asia, Part III, United Nations Technical Assistance unpublished MSS 1954. Extracts from tape recordings of discussions, *Tropical Housing & Planning Monthly Information Bulletin*, 1, 6 (February 1956), p. 24.

317 In a later report he made these points in more direct manner: "[t]he gap between reality and fictitious towers erected by experts is simply getting deeper and wider." C. Doxiadis, Housing Research in India, 1956, 32. Archive files 23558, Doxiadis Archive.

318 See Delhi Seminar on Housing and Planning for South East Asia, Part III, United Nations Technical Assistance unpublished MSS 1954. Extracts from tape recordings of discussions, *Tropical Housing & Planning Monthly Information Bulletin*, v.1, no.6, February 1956, 22, 20.

concerned with opinions like George Atkinson's,[319] who even implied using architectural standards as a kind of class segregation tool: "Governments […] must see that people who cannot afford to build to that standard either receive a subsidy […] or that there are facilities for them to live further out of town."[320] Connecting standards to experts' and governments' power over people's lives, and seeing housing rather as a dynamic phenomenon, which cannot be regulated from above or through architectural interventions, Doxiadis swiftly reached the conclusion that "[t]he best housing policy for a government with poor financial resources is not to build houses itself."[321]

Instead, Doxiadis explained, governments should deal with "ekistics policies" leaving houses to the people. Introducing perhaps for the first time "the science which does not [yet] exist" to an international and high-profile audience, he tried to shift attention to the shaping of an overall governmental policy. Rather than a mechanism which delivers only the number of houses corresponding to a certain fixed and limited budget, Doxiadis saw the role of governments as working towards the "mobilisation of as much as possible private initiative in the form of capital or labour for the creation of as many houses as possible." [322] Housing construction was found to be at the bottom of a long list of priorities dealing with the institutional and infrastructural framework that such a policy needed to address: "hiring and training of experts, development of policies and programmes, purchase of land, development of land through construction of roads, sewage and water supply systems, distribution of materials, assistance in construction, and lastly, building of housing."[323] Doxiadis' approach was coming closer to Tyrwhitt's: "First plan the community, then the house" and, like Tyrwhitt, he drew on his post-war reconstruction experience, aspiring to strike a balance between meeting urgent housing problems and long-term needs, eventually offering solutions that "[allow] for participation of the inhabitants in the building of houses, for houses growing stage by stage, and for the sharing of facilities by more than one family." [324] Not only

319 For Atkinson's key role in British colonial architecture see J-H. Chang, "Building a (Post)colonial Techno Scientific Network" in L. Duanfang, ed. *Third World Modernism*. (London, Routledge, 2010), pp. 211–235.

320 See Delhi Seminar on Housing and Planning for South East Asia, Part III, United Nations Technical Assistance unpublished MSS 1954. Extracts from tape recordings of discussions, *Tropical Housing & Planning Monthly Information Bulletin*, v.1, no.6, February 1956, 24.

321 See C. Doxiadis, Types and Densities of Housing Accommodation, Archive files 24965, Doxiadis Archive.

322 C. Doxiadis, Housing Research in India, 1956, 47. Archive files 23558, Doxiadis Archive.

323 See C. Doxiadis, Types and Densities of Housing Accommodation, Archive files 24965, Doxiadis Archive.

324 *Ibid.*

could these solutions reduce cost, Doxiadis claimed, they could also allow for a "distribution of responsibilities, down the line, from Government to the private citizen, so as to ensure the maximum results and develop a sense of joint responsibility for the attainment of common purposes."[325]

Like Tyrwhitt's model village, Doxiadis' proposal obscured the role of the expert in the process — not because the expert wasn't actually there, but because both visions seemed to aspire to another kind of expertise not premised on imposing architectural standards through government regulation or support. Doxiadis' views were even more clearly articulated by Ernst Weissmann, yet in a less combative way: "We definitely need standards […] The question is how to turn standards into an instrument of improvement and progress […] rather than a rigid framework which prevents you from developing further."[326] Rather than an instrument of control, this type of expertise would work to mobilise State and human resources, turning low-cost housing and planning into agents of social and economic development. The very term 'development' was suggestive of the new regime of knowledge and social intervention that emerged at this time. Enabling change, rather than imposing it "by leaps and bounds" (which was impossible, as Doxiadis stressed during the conference), meant searching not only for ways to incorporate change within architectural strategies (growing houses and settlements) but also considering the very factors that condition this change.

3.3.2 The local in development

In 1955, Doxiadis was commissioned by Weissmann to go back to India and survey the country and to help the Government establish a Regional and National Housing Centre with the goal of developing housing policies for India. In his report, he extended the views he had expressed in the conference. But he moved beyond the administrative and strictly economic and technical perspectives, to discuss housing in terms of "cultural landscapes" and the influences that shape them. Distinguishing "economic influence" that appears in the form of industrial projects, and infrastructure, such as water dams, and ports, and "cultural influence" from

325 *Ibid.*

326 See Delhi Seminar on Housing and Planning for South East Asia, Part III, United Nations Technical Assistance unpublished MSS 1954. Extracts from tape recordings of discussions, *Tropical Housing & Planning Monthly Information Bulletin*, 1, 6 (February 1956), p. 25.

western-educated architects, both found mostly in urban centres, Doxiadis divided urban and rural areas into two distinct cultural spheres which "evolve" at different speeds: the urban following 'foreign' and economic influences and the rural, still dependent on tradition:

> It is a real pity to discover when walking in the new Indian settlements or when looking at contemporary monuments that there is nothing Indian in them. By Indian [...] I mean the continuance, the evolution and the artful expression of the age old forms to be seen in the Indian countryside and the small towns, of forms which have been conditioned by the Indian landscape, the Indian climate, the Indian economic and social life and the Indian people.[327]

The countryside, was seen as the repository of the type of "continuance, the evolution" that seemed important for developing housing policies for India and elsewhere, because it was in these places that an understanding of locale was still to be found:

> The first and basic principle which directs the housing effort in every area of the world is the principle of evolution of local solutions […] it is only through evolution that it is possible to achieve major results. Such evolution can certainly be directed and precipitated but it always remains an evolution of the existing widespread solutions.[328]

The "local" replaced the "organic" which emerged in his earliest writings, but shared much of its properties as the place where life seemed to be the undivided result of interconnected social, economic and cultural activities, and where settlements and housing appeared as their 'natural' and inevitable expressions. In this approach, however, the local took precedent over the national — not only because of the variety of local conditions that exist in one country or even one region, but, as Doxiadis showed, because different locales within the country were being exposed concurrently to global and local forces changing at different speeds.

Doxiadis' analyses of the impact of international economic and cultural influences on the locale, didn't share the idealism of the villagisation policies in India, which aspired to build buffers against the impact of the 'forced' economic integration of rural societies into the post-

327 C. Doxiadis, Housing Research in India, 1956, 32. Archive files 23558, Doxiadis Archive.
328 *Ibid.*

war national and international orders. He was not attracted by the 'escapism' inherent in fragmentary, small-scale solutions and the generalisations of architectural tradition, and he would underline that "[t]he efforts made some time to speak of Indian town and especially Indian village are over-simplifications which are very dangerous."[329] Committed to an interconnected world, he would try to expand the capacities of planning to manage and ameliorate the social-cultural impact of what he thought as a 'natural' (and hence, inevitable) process taking place on a global scale, that was reshaping local landscapes. The confidence would be found, presumably, in pragmatism: "A countryside without major economic projects will develop quietly whilst major centres will develop at a greater speed. In both cases we have to be realistic and adjust ourselves to the special requirements."[330] In this context, the concept of the 'locale' would be introduced into an even more systematic approach to regional planning. Doxiadis claimed that to understand the local conditions (such as climate, topography, population, income, land uses and settlement characteristics), and to propose solutions to such conditions, it would be imperative to work within "homogenous regions."[331] He seemed to imply that the idea of regions as a division of the territory on an intermediate scale between the abstract categories of the locale—which is uniform—and the national—which is heterogeneous and uneven—would be the crucial tool to manage the complexities and various speeds that emerged in the decolonised world.

3.4 Patterns of rural development in the Middle East

In India, Doxiadis' regional planning approach, which was primarily inspired by German and British planning cultures, encountered another planning legacy found in the Tennessee Valley Authority (TVA), a New Deal project undertaken during the 1930s for the development of a river basin.[332] In the 1950s, the TVA was promoted by US and UN policy makers, yet again, as a successful model of 'democratic' cooperation among government, scientists/technocrats, private corporations and the local population. This model was transferred to various countries, during the Marshall Plan; but it was also the main inspiration behind the US

329 *Ibid.*
330 *Ibid.*
331 *Ibid.*
332 See G. Clapp, "The Integrated Development of River Basins: The Experience of the Tennessee Valley Authority", *United Nations Scientific Conference on the Conservation and Utilization of Resources,* New York, 1948.

technical assistance program in the mid-1950s in India, where American engineers and construction companies implemented large-scale hydro-electric projects in the name of Nehru's industrialisation vision, employing western science and technology as a form of economic and cultural 'war' against communism.[333]

This type of large-scale project exemplified the prevailing techno-scientific logic of appropriating natural resources to promote socio-economic development that reshaped entire landscapes and decisively configured development patterns in different countries.[334] Based on the alliance of foreign assistance, political elites, local industrialists and governmental officials, these techno-scientific projects were heavily supported by international development organisations such as the International Bank for Reconstruction and Development.[335] This was precisely the economic approach criticised in the 1951-report of Crane's mission, as among the reasons that exacerbated housing needs for the low-income population in the Third World. Yet the same report emphasized that the TVA project, as a model of "geographic regional planning" was an "opportunity for large-scale social and economic development" extending beyond the provision of electric power, to extensive land reclamation, agricultural development and the planning of new settlements. The report maintained that such projects offered an opportunity to achieve multiple goals, and thus illustrated the potential for a regional planning approach that would address the interdependence of urban-rural relations and promote decentralisation policies as solutions to rural-urban migration and housing problems. The 'comprehensive' approach of projects like the TVA was embraced by economists, engineers and architects in the mid-1950s, with whom Doxiadis was closely collaborating when he joined economic development missions in Syria and in Pakistan in 1954.[336] **(Fig. 3.2)**

333 See J. McNeill, J. Robert, and C. R. Unger, eds., *Environmental histories of the Cold War* (Cambridge, Cambridge University Press, 2010), p. 141.

334 See for example P. Pyla, and P. Phokaides, "An Island of Dams: Ethnic Conflict and the Contradictions of Statehood in Cyprus", in F. Menga, and E. Swyngedouw, eds., *Water, Technology and the Nation-State* (London, Routledge, 2018), pp. 131-146; P. Pyla, ed. *Landscapes of Development: The Impact of Modernization Discourses on the Physical Environment of the Eastern Mediterranean* (Cambridge, Harvard University Aga Khan Program, 2013).

335 See for example S. Khagram, *Dams and Development: Transnational Struggles for Water and Power* (Cornell, Cornell University Press, 2004); and B. Rich. *Mortgaging the Earth: World Bank, Environmental Impoverishment and the Crisis of Development* (London, Routledge, 2014).

336 Prior to the New Delhi Seminar which took place in January 1954 Doxiadis was the advisor for Housing and Community Planning in the mission of International Bank for Reconstruction and Development (IBRD) in

The imperative of development in international development agendas and national economic planning did not escape Doxiadis' attention. He declared 'development' "western civilisation['s]" gift to the rest of the world's move "towards a higher standard of living, towards a better life."[337] As development plans were largely defined by economic priorities and abstract social goals, such as the fight against world poverty, Doxiadis highlighted a missing link between development planning and the locale. He stressed that "plans for economic development have to become more localised […] to obtain a stable footing, rooted in the soil of the country."[338] Although one could understand this formulation as a metaphor, intended to emphasize the importance of connecting economic planning with the local resources, for Doxiadis it also meant the importance of making the plan feasible. In light of both meanings, Doxiadis outlined the role of the planner as a mediator or a translator, responsible for facilitating the translation of local conditions into the logic of economic planning and vice versa. For such a task, Doxiadis would claim, "we need new techniques, we need new tactics", and he went on to adapt Ekistics to developmental agendas and the socio-economic reasoning behind them.[339]

In this process, the region would be the conceptualisation of the 'locale' in developmental terms, as the place undergoing several changes at different speeds through the "interaction of forces playing upon the area in terms of time as well as in terms of geography and social economics."[340] Planning was no longer understood as a direct response to existing conditions and needs, but as a process of 'synchronizing' these multiple 'forces'. Approaching the 'locale', in these terms, also implied understanding the place as an outcome of continuous overlapping transformations some of which had lasting effects, while others had vanished, and still others could arise again. This vision of a dynamic tradition gave planners the freedom to choose which processes to emphasize, making links to a material, but — more importantly — an imagined, place:

Syria between February – April 1954. In October 1954, Doxiadis joined the Harvard Advisory Group for a similar mission in Pakistan.

337 C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives.

338 *Ibid.*

339 *Ibid.*

340 *Ibid.*

> In the case of Greater Mussayib, the present absence of villages is […] simply due to the system of land tenure which prevailed over recent centuries coupled with farming methods which resulted in the decay of its irrigation system and high increase in salinity.[341]

As Doxiadis reasoned, a change in the existing land tenure and irrigation system would lead to a shift in economic conditions in the area, allowing an extinct but 'local' tradition, which the firm exposed by mapping unexcavated ruins of "forgotten villages" in the area, to recover.[342] So, the firm could sanctify the agenda of creating new village farming communities in the area promoted by international development organizations and the Iraqi government at the time. This was an example of the work of translation which Doxiadis implied, when he emphasized the need to connect economic agendas to the 'soil of the country'.

The Great Mussayib project was part of Iraq's efforts to accelerate land reforms aspiring to make arable land accessible to landless farmers and to turn them into smallholders. However, faced with political resistance from a powerful class of tribal landowners, whom these reforms were intended to weaken, the Iraqi government's efforts were focused mostly on the remaining state land (the so called Mini Sirf).[343] The government used its substantial oil revenues to promote infrastructure projects and land reform, and to run the agricultural economy using minimum investment and cheap labor, without interfering with the landowners' power.[344] By expanding cultivated land through irrigation projects and by distributing land plots, the government and its western consultants hoped to gain the support of an emerging class of small landowners, to control tensions among different ethnic groups and to achieve socio-political stability.[345] Another goal was to gradually push landowners to invest in industrial projects. Following IRBD's suggestions in 1952, these policies were

341 *Ibid.*

342 "[T]he establishment of village communities in this area has been shown to extend back to the very dawn of our knowledge of human civilization" C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives, par.31.

343 A. Warren, "The Pre-Revolutionary Decade of Land Reform in Iraq", *Economic Development and Cultural Change,* 11, 3, Part 1 (1963), pp. 267-288.

344 S. Haj, "Land, Power and Commercialization in Lower Iraq, 1850–1958: A Case of 'Blocked Transition", *The Journal of Peasant Studies*, 22, 1 (1994), pp. 126-163.

345 See E. Kapstein, *Seeds of Stability: Land Reform and US Foreign Policy* (Cambridge, Cambridge University Press, 2017).

combined with community-building and village planning.[346]

The British engineer Michael Ionides, a member of the Iraqi Development Board (established in the 1950s to promote the country's modernization), saw these priorities as critical for the survival of the government. The urgency was not simply to deliver another settlement project, as Ionides claimed in hindsight, but to achieve permanent results: "From a human angle a totally different question should be asked for each project how far will it stimulate a self-generating chain reaction of activity among the people?"[347] Hinting that the 1958 military coup that overthrew the pro-British government might have been avoided if the modernization processes had been accelerated, Ionides also indicated why the Board leaned on Doxiadis Associates for important planning commissions. As Pyla stressed, in Doxiadis and Ekistics, the Board found the 'scientism' and the political neutrality to conceal their own "anti-communist fears and pro-Western alliances." They assigned to the firm, Baghdad's Master Plan, and housing projects in different parts of the country — aspiring to foster national pride and overcome social division.[348] Responding to the Board and the regime's aspirations, Doxiadis approached Ionides' concerns, but not simply through conventional self-help housing schemes. This remained at the bottom of the firm's priorities. Instead, Doxiadis saw this project as an opportunity to exemplify a new approach for "regional development programmes." Combining the developmentalist discourse and regional planning's claims for comprehensive planning, the firm aspired to redefine the organization of the social and productive activities of the area by combining land reform, settlement planning and the management of physical and social infrastructure.

The rural community envisaged by DA in the Mussayib project was different from other settlement projects proposed around the same time in Iraq. The project of Dujaila, in the north of Baghdad was implemented in 1946 for approximately 1200 families, with a very clear political intention of not creating a community settlement. The land was divided into standard, square plots (500x500m.). An individual farm house was placed at the corner of

346 IRBD. *The Economic Development of Iraq; Report of a Mission Organized by the International Bank for Reconstruction and Development at the Request of the Government of Iraq* (Baltimore, Johns Hopkins Press, 1952).

347 M. Ionides, *Divide and Lose. the Arab Revolt of 1955-1958* (London, Geoffrey Bles,1960), p. 212.

348 For an analysis of the Iraqi sociopolitical context in relation to Doxiadis' assignments see P. Pyla, "Back to the Future: Doxiadis's Plans for Baghdad", *Journal of Planning History*, 7 (2008), pp. 3-19.

each plot, creating groups of four houses to promote some interaction among the farmers whose life was centred on cultivating their land. Travels to any kind of communal or public services demanded a considerable investment of time.[349] The absence of social services was considered a serious limitation on this project, and IRBD's 1952 report on Iraq emphasized the need for "the community pattern to improve by a more social grouping of homes and a more accessible and convenient location of schools and other public facilities."[350] Responding on these remarks, the mission proposed to readjust the Dujaila Plan by consolidating all houses in one plot of land, situated off-centre, and adding school, stores, shops and a playground. A larger village centre would be created at the intersection of four rural units close by the residential plots. In this proposal, social interaction among farming families would increase, and public services would be more accessible and at close range, although the distance from cultivated land would increase for some of the farmers. According to the report, a more dispersed housing pattern was selected to avoid "overcrowding", maintaining the feeling of a suburban neighbourhood. Doxiadis, who was committed to the idea of community building, was even more critical of the independent farmsteads attributing them to experts' western bias as exhibited in the "conscious line of thought of many Britons and Americans that isolated family farm somehow represents the only moral way of cultivating the land."[351] **(Fig. 3.3)**

Although the IRBD and Doxiadis proposals chose the same socio-economic priorities, DA's proposal underlined the need to promote "fairly compact village communities" emphasizing that by "grouping households into villages, many amenities become economically feasible."[352] Doxiadis' introduction of "economies of scale" into an agrarian, non-mechanized economy aspired not only to lower the cost of the physical and social infrastructures, but also to strengthen productivity and efficiency, even for labour-intensive activities. A critique of the

349 See B. Fisk, "Iraq's Pilot Project for Land Settlement", *Economic Geography*, 28, 4 (October 1952), pp. 343-354.

350 IRBD. *The Economic Development of Iraq; Report of a Mission Organized by the International Bank for Reconstruction and Development at the Request of the Government of Iraq* (Baltimore, Johns Hopkins Press, 1952), p. 437.

351 C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives, par.33.

352 C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives.

IRBD's missions at the time highlights the limitations of the village models circulating within the Bank, anticipating DA's approach:

> Again, inasmuch as the village plays so central a role in many of the underdeveloped economies, it might be worthwhile devoting more attention to alternative ways in which the village may be transformed and integrated into a modern type of economy, especially since a fundamental problem in most of the countries examined is that of substituting a dynamic, universalistic, and generalized network of reciprocity for a traditional, particularistic, and localized one.[353]

It could be said that DA's plan for the Greater Mussayib proposed an agrarian political economy based on a family-farming model where rural societies would take part in a "dynamic, universalistic and generalised network of reciprocity" as the above extract envisioned. The Plan's attempt at a systematic programming of the connections and movements of people and goods on different scales attests to such an approach, aspiring to make traditional systems of cultivation labour-efficient, foster community pride and imagine a 'mobilised' peasantry.

3.4.1 Standardisation of agrarian landscapes

The transformation of the landscape towards these ends was imagined through the use of Christaller's spatial-economic approach and the hexagonal pattern. This became the key for Doxiadis to engage in processes of translation from the economic logic of development planning to land-use planning, and from existing productive patterns to new ones. Christaller's hexagonal patterns were first used as tools for location analysis and design, which permitted establishing a hierarchical system of settlements on three levels and sizes, merging new settlements into an existing settlement network. New villages of two levels and a larger market town were planned to be in direct connection to the neighbouring existing town of Hilla. As Doxiadis claimed:

> […] the same policies which have so far guided the determination of existing and

353 J. Spengler, "IBRD Mission Economic Growth Theory", *The American Economic Review*, Papers and Proceedings of the Sixty-sixth Annual Meeting of the American Economic Association, 44, 2 (May 1954), pp. 583-599.

potential ekistic relations of the constellation of settlements around Hilla can be used to select the sites for the new Class A and B villages within the project area.[354] **(Fig. 3.4)**

Secondly, the hexagonal pattern projected onto the territory promoted standardisation of the land and the activities related to its cultivation, an approach which Doxiadis had already tested this during his IRBD's mission in Syria. The pattern was used initially as a tool to divide the area roughly into 'village' zones, which were then equally divided into land plots of 50 *mesharas* (12.5 hectares) assigned to each household following government land reform policies. Combined with specific types of cultivation, this could also lead to rough estimates of crop yield and rural income. As an unquestionable geometric shape, this pattern introduced homogeneity in the area and formalised an egalitarian system of land distribution. Family plots were not only divided up equally, but each village was also to be equidistant from the others, and from the water canals — allowing, in principle, equal access to natural resources. **(Fig. 3.5)**

A conscious 'programming' of everyday and recurring activities was also coming out of this standardisation of the landscape. The crucial factor that connected the distribution of population in villages was time-distance. Estimating the maximum distance from the village to the remotest cultivated plot at 40 minutes (an arbitrary number that DA connected to the comfort of walking in Mussayib's hot weather conditions) gave a radius of 2800 metres (1 min / 70 metres). This fixed the area of cultivated land for each village and, consequently, the number of families/households for each village, based on the standard division of 50 mesharas. Eventually, this controlled the positioning of the settlements over the landscape and the distance between them, indirectly shaping everyday (and less frequently recurring) routes between village, field, and market town. The careful programming of everyday routes was also reflected in the design of movement within the village, where an emphasis was also placed on creating different paths for humans and animals and separate exits and entrances to the houses to "limit the penetration of the animals into the village."[355] There was an

354 C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives.

355 *Ibid.*

argument for sanitation, but since the domestic animals still shared the household with humans, as the housing plans suggest, the firm was aiming for the symbolic effect of keeping public spaces dedicated to human interaction. Common facilities, such as water supply fountains, baths, and other enclosed and open public spaces strove for the same effect of casual and routine social interactions as essential factor for fostering community ties.[356] **(Fig. 3.6)**

By over-emphasising public uses and spaces, Doxiadis, cast housing once more as the lowest priority for the whole project. That houses were not to be emphasized, was manifested in a dispute over the terms of architectural expression between Doxiadis and the Egyptian architect Hasan Fathy, who had a key role in this project and in the firm's Iraqi assignments. As Pyla shows, both Doxiadis and Fathy had a common interest in empirical methods, which allowed them to selectively "credit local knowledge systems with a scientific wisdom." [357] As Fathy was much more invested in expressing this interest through architectural form and typology, he tried to find inspiration in Iraqi vernacular architecture to extend his own experiments with rural housing in New Gourna. Since the project was expected to settle an Arab-origin population, using Egypt as a source of inspiration seemed acceptable to both men.[358] Even though Doxiadis appreciated Fathy's 'scientific' framing of courtyards and openings as climatic devices, Pyla underlined, how "Fathy's commitment to the craftsmanship of design, detail, and tectonics remained at odds with the development firm's preference for generalization, repetition, and mass production."[359] Comparing Fathy's neo-vernacular forms with the modest and simplified types proposed by DA, in the same study, suggests not only a different understanding of the appropriate architectural expression, but also (perhaps) an

356 Similar strategies were used in housing projects in Baghdad. See the discussion on "gossip squares" in P. Pyla, "Back to the Future: Doxiadis's Plans for Baghdad", *Journal of Planning History*, 7 (2008), pp. 3-19.

357 P. Pyla, "Hassan Fathy Revisited: Postwar Discourses on Science, Development, and Vernacular Architecture", *Journal of Architectural Education* 60, 3 (2007), pp. 28-39.

358 In his attempts to present villages as the preferred solution against other types of rural development, Doxiadis compared 1950s Iraq's land reforms with then ones promoted in 19th century Egypt. As he claimed those reforms had led to the emergence of rural villages and that was "[a] point to the healthy development of lands where similar conditions exist." C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives.

359 See P. Pyla, "Hassan Fathy Revisited: Postwar Discourses on Science, Development, and Vernacular Architecture", *Journal of Architectural Education* 60, 3 (2007), p. 32.

attempt by the Greek planners to avoid socio-cultural elitism[360] between architects and inhabitants, and between this project's future users and the surrounding human population.

In Doxiadis and Fathy's project, Muzzafar argues, "[i]t was important that to the inhabitant the house still appeared "traditional"", suggesting how architectural form was to act as "mediator of social, economic and scientific forces" to facilitate the transition of peasants to a transforming world.[361] However, Doxiadis' insistence that only a small part of the house would be constructed from the outset imagined the shaping of the domestic environment as an open-ended process, with limited control on behalf of the designer. Besides exhibiting Doxiadis' and the firms' commitment to cost-efficiency, this disregard of the houses' future development might suggest also a low appreciation for the role of domestic sphere in the transformation of local societies. It might also reflect a conceptualisation of rural life through the "dual economy" prism, where the domestic space was assigned to the 'traditional' sphere, whereas the land and the public spaces, whose productive capacity was acknowledged, were assigned to the public sphere where socio-economic exchanges dominate.

If this hypothesis stands, these rural villages were constructed in the image of a world undergoing transformation at different speeds, with international and local forces penetrating village life. Rather than imagining rural communities in a homogenous fashion as culture-bound, static and unchanged, or as strongholds against market forces (in the Gandhian sense), Doxiadis seemed to embrace the uneven impact of economic transformations on the social and built environment as inevitable. In this light, houses and their rather modest architecture were bound to the "economic limitations" of the agrarian economy and its slow-paced development conditioned by broader transformations.[362] Even though the construction of housing was to be assisted by trained "village workers" and "village councils" the initiative was left to the inhabitants. So, the completion of houses on a family and village scale was contingent on different factors and on the risks of the, often

360 See the relevant point on "postcolonial traditional elitism" by J. Chang, "Tropical Variants of Sustainable Architecture: A Postcolonial Perspective" in G. Crysler, S. Cairns, and H. Heynen, eds. *The SAGE Handbook of Architectural Theory* (London, Sage, 2012), p. 611.

361 I. M. Muzaffar, *The Periphery Within: Modern Architecture and the Making of the Third World* (PhD dissertation Massachusetts Institute of Technology, 2007), p. 192.

362 C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives.

complex, bureaucratic and financing mechanisms devised for such schemes.

This approach could suggest a deeper appreciation of the agency of the inhabitants, or else as an attempt by Doxiadis to avoid the complexities of the private/domestic sphere and the dynamic nature of a peasant economy which was difficult to model and plan. Even so, between the cultivating field and the house, it was the public spaces and buildings, the meeting points at water foundations, and the multi-scale network of social and economic infrastructure that would facilitate "the transformation of Greater Mussayib from a tract of irrigated saline land into a fully integrated environment for human development."[363] In this vision, the peasant was understood not only as a worker, living off the land, or tied to family and cultural traditions, but as a mobile subject transcending different spheres:

> This consideration forms much of the basis of our ekistic thinking: the planning for a man in his totality as a fully sentient human being, and not simply as a producing animal requiring certain minimum of food, shelter and in order to function.[364]

As the citizen of an emerging national public sphere and international economic networks, this new subject was framed through a "humanistic" vision that aimed to transcend functionalist modern discourses, colonial agrarian politics, and the limitations of the technocratic 'self-help housing' discourses of international organisations. Nevertheless, it remained bound to the broader land reform agendas and self-help housing strategies which were deeply tied to Cold War geopolitics and the uneven power relations within the nation serving, eventually, as a "minimum subsidy to the social reproduction of the rural proletariat and semi-proletariat on a global scale."[365]

The firm's propensity to standardisation and universalist assumptions makes Greater Mussayib a case of "high-modernist" state-led planning which as James Scott showed, "came cloaked in egalitarian, emancipatory ideas: equality before the law, citizenship for all, and rights to subsistence, health, education, and shelter."[366] Certainly the project adopted the

363 *Ibid.*
364 *Ibid,* par.11.
365 See S. Moyo, and P. Yeros, eds., *Reclaiming the Land: The Resurgence of Rural Movements in Africa, Asia and Latin America* (New York, Zed Books, 2005), p. 22.
366 J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Yale University Press, 1998), p. 352.

rhetoric and aesthetics of egalitarianism in land distribution and access to natural and State resources. At the same time, conscious standardisation was employed not only as an aesthetic, but also as a cost-reducing strategy appropriating local-based production patterns, social complexity, and informality. As Chang argues, "the point here is not to present (false) dichotomy between, what James Scott conceptualized as, the localized, quotidian and embodied knowledge (or *metis*) and the codified, standardized and technical knowledge (or *episteme*)."[367] Among the negative effects of such a dichotomy would be to completely dismiss the project of redistribution and egalitarianism and to fall into a "small farm populism,"[368] which Scott himself did not avoid, and became mainstream in neoliberal development policies after the 1980s. By escaping this duality, we can read the Greater Mussayib project as a semi-structured, and open-ended socio-economic landscape where the formal and informal coexisted, conditioning an imagined emancipated peasantry in its confrontation with the capital and State, albeit not in an even way, either within the peasantry or in the household.

Pyla has argued that the Greater Mussayib was a 'pilot' project for future rural planning projects by DA, exemplifying the emergence of new priorities for planning, as Doxiadis understood them at the time.[369] It also formed an important episode in a lineage of rural resettlement projects undertaken by Doxiadis since the early post-war years in Greece. Rather than understanding Doxiadis as an 'orthodox' modernist urbanist and Ekistics as a tool for standardisation and urbanisation, this thesis, so far has examined closely the formulation of Ekistics' modernist vision, which was shaped by processes of intense ruralisation, rural resettlement projects and village planning. From Greece to Iraq, Ekistics was shaped by multiple contexts and actors, which focused on rural areas to promote national and global politics. Through these engagements, Doxiadis would construct the rural both as a real, and imagined site: in opposition to the city or the urban, but also as a critical position to consider the interdependence of the city and the countryside, or to contemplate the social, economic and cultural dynamism and the interconnectedness of settlements at different scales. These

367 See J. Chang, "Tropical Variants of Sustainable Architecture: A Postcolonial Perspective", in G. Crysler, S. Cairns, and H. Heynen, eds., *The SAGE Handbook of Architectural Theory* (London, Sage, 2012), p. 606.

368 See H. Bernstein, "Land Reform: Taking a Long(er) View", *Journal of Agrarian Change*, 2 4 (October 2002), pp. 433–463.

369 P. Pyla, *Ekistics, Architecture and Environmental Politics, 1945-1976: A Prehistory of Sustainable Development* (PhD dissertation, Massachusetts Institute of Technology, 2002), p. 94.

different and overlapping understandings of the rural were shaped along with Ekistics. Doxiadis' understanding of Ekistics was influenced by different intellectual sources and institutional changes during and before the war, but it was also reframed and informed by these different projects in which he actively participated from the mid-1940s to the end of the 1950s: the reconstruction of rural housing and settlements in Greece, programmes of technical assistance promoting economic and geopolitical agendas in the backdrop of Cold War; decolonisation and nation-building process in South Asia the Middle East; international modernist discourses on village forms, vernacular architectures and tradition; and finally the emerging international organisations' rural development agendas.

At the end of the 1950s, when DA's commissions would proliferate, Doxiadis would promote Ekistics as "the science of human settlements" on an international level emphasizing the interconnectedness and multi-scalarity of the approach:

> Within this frame we must build roads and villages, and in turn connect these with the central town and the towns further down, ending up with a conceptual comprehensive ekistic network that would cover the whole earth.[370]

Moving from the micro-networks of rural communities in the Greater Mussayib to an ekistic network covering the planet, signified a considerable shift in scale, and it was accompanied by an exploration of new conceptual tools, such as infrastructures and networks to respond to this shift. The following section examines the role of scale in the reconceptualization of Ekistics in the 1960s through research projects and ongoing international debates in which Doxiadis actively participated and initiated. These activities formed the backdrop for the Greek planners' engagement with the socio-political context of postcolonial Africa, which also posed new demands and on Doxiadis' conceptual formulations and DA's transnational practice.

370 See Doxiadis, "Architecture, Planning and Ekistics: Abstract of the Third Part of a Lecture Series Given at the Massachusetts Institute of Technology, Spring 1957", *Ekistics,* 7, 42 (April 1959), pp. 293-296; C. Doxiadis, *Ekistics: The Science of Human Settlements,* Reprint of a Paper Presented at the Town and Country Planning Summer School, Southampton, September 2, 1959. Archive files 2520, Doxiadis Archives.

4 Ecumenopolis: Planetary development and the re-scaling of Ekistics

4.1 Revisiting Ekistics

Doxiadis' celebration of developmentalism in the 1950s assigned architecture and planning a crucial role in facilitating and managing socioeconomic change and provided a reasoning that reinforced his earlier assumptions of settlements as organic and dynamic entities. Inspired by Christaller who considered dynamic change and order intrinsic to nature and human activities,[371] Doxiadis, conceptualised the formation of settlements, theoretically, as a spontaneous, unplanned, 'natural', and dynamic socio-spatial process. Conceived by way of the analogy of 'economy-as-nature', Ekistics saw settlements as the outcome of inherently rational subjects who aimed to satisfy their own interests (e.g. profit, pleasure, safety). Through this 'naturalisation' of the processes that shape human settlements seen as ahistorical/universal phenomena, Ekistics was instituted as a framework for the study and codification of the underlying 'laws' that govern settlements' spatial distribution, form and dimensions. Drawing on the analysis of these 'laws', Ekistics was also proposed as a modernist planning framework focused on rationalising and optimising settlements' planning. In the mid-1940s, for example, Ekistics aimed to restore a missing unity between the 'outdated' Greek settlements and modern economic and administrative conditions. Taking a neoclassical paradigm for its premise, Ekistics was understood as a form of territorial, and settlement planning which aspired to promote the re-alignment of economy, society and State, on regional and national levels. This liberal vision of nation-building was expressed through decentralised statecraft and the illusion of the 'rationality' of market exchanges. Within this vision, the State, and planners' role, in it were thought to be independent from social dynamics. Their impartial positioning presumably allowed them to manage social antagonisms and advance the public interest.

371 Christaller stated: "The crystallization of a mass around a nucleus is, in inorganic as well as organic nature, an elementary form of the order of things which belong together: a centralistic order. This order is not only a human mode of thinking, existing in the human world of imagination and developed because people demand order. In fact it is part of the inherent pattern of matter." Cited in A. Whittick, *Encyclopedia of Urban Planning*, New York: McGraw-Hill, 1974: 232.

In the 1950s, by embracing the tenets of modernisation theory which, as Gilman showed, was "understood as a manifestation of American post-war liberalism,"[372] Doxiadis developed Ekistics into planning framework dedicated to the socioeconomic modernisation of other non-industrialised countries. Following other modernisation experts he aimed to facilitate a transition between 'tradition' and the 'modern' by utilizing and emphasizing non-economic values in the process. Conceptualising architecture and planning as agents of socioeconomic transformation, Doxiadis rejected the idea of static plans and spoke instead of programs that could facilitate and manage the impact of socioeconomic change on local populations.[373] Thus, planning was assigned a crucial role that operationalised 'traditional' architectural values, surplus labour, resources and local skills. It would also support land reform and community building as vehicles for social stability and the legitimisation of state policies and Cold-War geopolitical agendas as these were expressed in Southeast Asia and the Middle-East.

In so doing, Doxiadis witnessed how architecture and planning were becoming intertwined with transnational flows of expertise, economic aid, and Cold-War geopolitics and with socio-political dynamics at the national level. Ekistics was gradually reformulated along with emergent transnational planning agendas and their intention to address international problems of poverty, shelter and socioeconomic development in the Third World. By the end of the 1950s, Ekistics was introduced, and promoted internationally, as the "science of human settlements"; as a multi-scale planning framework dedicated to population management, the reorganisation of natural and state resources and the shaping of public and social infrastructure. While these were considered important for the shaping of local communities in the name of nation-building they were also framed within a vision of a progressively interconnected world where relations between the global and local scales were radically redefined.

This chapter traces the emergence of scale as a crucial element in the reformulation of Ekistics in the 1960s at a time when Doxiadis Associates expanded their office network from South

372 N. Gilman, *Mandarins of the Future: Modernization Theory in Cold War America*. (Baltimore, John Hopkins University Press, 2003), p. 4.

373 C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives.

East Asia to Africa, North and South America and Doxiadis translated Ekistics' claims into research inquiries and scientific concerns. The chapter focuses on multiple exchanges between the research project of the City of the Future (COF), which envisioned future development on a planetary scale, and the Delos Symposia, the annual international scientific meetings initiated by Doxiadis in 1963. It highlights the theme of scale as common to both activities which ran in parallel until the mid-1970s, and traces their role in the reformulation of Ekistics. The chapter shows that these exchanges among Ekistics, Ecumenopolis and the Delos Symposia led to a reconceptualization of relations between the global and the local, and to a further systematization of planning scales that became crucial for Ekistics in both theory and practice. The re-scaling of Ekistics in the 1960s will also be crucial in examining Doxiadis Associates' spatial visions for postcolonial Africa.

4.2 Evolutionary thinking

At the end of the 1950s, Ekistics was definitively transformed from a regime of knowledge, under the power of the State, to an autonomous, inter-disciplinary, 'scientific' field aspiring to reach broader, international, audiences beyond architecture and the spatial disciplines. While Ekistics was already framed as part of the logic of development, there was also a conscious effort by Doxiadis to found Ekistics on 'scientific' premises, drawing again on organic/biological analogies:

> Ekistics is derived from the word EKOS or habitat and from the verb EKO meaning to settle down. It has the same origin as *economy* which means the science of managing our homes, *ecology,* etc. Ekistics is the science of human settlements, which like every other science studies the nature, the origin and evolution of this species. It tries to establish rules controlling this evolution and it tries to analyse and classify all the phenomena surrounding this evolution.[374]

While "evolution" was used to describe 'natural' phenomena, at the time, Doxiadis used "development" to express a *planned* evolution through spatio-temporal forms, such as

374 C. Doxiadis, *Ekistics: The Science of Human Settlements,* Reprint of a paper presented at the Town and Country Planning Summer School, Southampton, September 2, 1959 (Norwich: Page Bros. (Norwich) Ltd. 1959), p. 18.

"varied stages of development" or "sequential patterns of development."[375] Evolution was thus seen as an inevitable, "metahistorical process" whereas, development, was the outcome of planning.[376] Conflating the two, Ekistics was, for Doxiadis, *the* privileging 'science' that combined "descriptive" and "prescriptive" approaches to settlement problems,[377] as summarised in this rather unassertive statement in one of the many lectures he gave during those years: "We have to see and understand what is happening around us but which is yet invisible. We have to translate this into form and reality."[378] To emphasize why Ekistics offered not merely a reflection of what was just "happening around," but an active intervention which would take place only after a "proper understanding of the situation," he later used the analogy of medicine and describe Ekistics as "a process of treatment and of healing, [which] must necessarily include the act of diagnosis in order to be fully developed."[379] On this analogy, settlements as living organisms may also suffer from "diseases" and planners must "act as physicians."[380] Ekistics, according to Doxiadis, was crucial, not only in "diagnosing" the way settlements grow and the crises they experience, but also in offering 'remedies' to guide them to healthy 'development'.

With confidence in Ekistics' capacity to predict and guide the expansion and growth of cities, Doxiadis emphasized time, or the "fourth dimension" in the understanding of settlements. In exploring a guiding framework to address the future growth of new and existing cities Doxiadis would use the term "Dynapolis" to describe a "uni-directional" city growing across a perpendicular grid. This formed the basis for Doxiadis Associates' early planning in Baghdad (1957) and, appeared more clearly in Islamabad, the new capital of Pakistan.[381] **(Fig. 4.1)** Henceforth, settlements would be conceived as dynamic entities which not only grew in and of themselves, but as part of broader processes of dynamic growth that tended to create

375 C. Doxiadis, "Architecture, Planning and Ekistics." *Ekistics* 7, 42 (1959), pp. 293-298.

376 I tried to expand on the analysis of Gilman, who compares Rostow's scientific and political aspirations with Doxiadis'.

377 See Pyla's analysis of Doxiadis' use of prescriptive and descriptive approach in his article "Ekistics and Regional Science". See P. Pyla, *Ekistics, Architecture and Environmental Politics, 1945-1976: A Prehistory of Sustainable Development* (PhD dissertation, Massachusetts Institute of Technology, 2002), p. 51.

378 Part of a series of lectures Doxiadis gave in MIT. See C. Doxiadis, "Architecture, Planning and Ekistics." *Ekistics* 7, 42 (1959), pp. 293-298

379 C. A. Doxiadis, *Ekistics: An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p.278.

380 *Ibid.*

381 See M. Daechsel*, Islamabad and the Politics of International Development in Pakistan* (Cambridge, Cambridge University Press, 2015).

regional and global interconnections, eventually leading to a more continuous network of settlements. Expanding the idea of Dynapolis on a global scale Doxiadis named this future form of settlement the "universal city, or Ecumenopolis"[382] which became one of the most emblematic research programs of the Athens Centre of Ekistics (ACE) which was established in 1963.[383] By referring to this future continuous planetary settlement as Ecumenopolis, Doxiadis exposed his evolutionary thinking — but also the urban bias behind architectural modernism, social sciences and the economic developmentalism of his time, which all seemed to connect economic growth and social development with cities and urban spaces. At the same time, Ecumenopolis was an exploration in the building of "ideal" future settlements. Thus, it was meant to serve as a search for a proper form of planetary urbanisation, which projected Ekistics' assumptions about the feasibility of sustained growth in which planning could also achieve a 'balance' between settlements, population and resources.

As an image of the planet's future, Ecumenopolis was somewhat reflecting developmental visions of the time which were also predicated on evolutionary thinking. As Gilman argued, Ecumenopolis "expressed virtually every trait of social modernism", from the aspiration to form a unified system of knowledge, all the way to envisioning global sustained growth under the "guidance of post-ideological technocrats."[384] Gilman used Doxiadis' Ecumenopolis as a manifestation of modernisation theories in the mid-1960s, drawing a connection especially to Walter Rostow, whose influential 1960 book *The Stages of Growth* shaped development discourse.[385] On the surface Doxiadis and Rostow seemed to follow similar methodologies leaning on evolutionary metaphors to describe the future in a linear fashion where changes

382 Ecumenopolis was the outcome of the City of the Future (COF) project which started in 1960 with funding from the Ford Foundation. It continued as a research project of the ACE using own funds.

383 ACE was a research branch directed by John Papaioannou under Athens Technological Organisation (ATO) which was founded in 1958 to expand educational, research and publication activities. Other branches included the Graduate School of Ekistics (GSE), the International Programs Division (IPD), and the Documentation division. For a detailed description of ATO activities, see, D. Philippides, *Κωνσταντίνος Δοξιάδης. Αναφορά στον Ιππόδαμο [Constantinos Doxiadis. Reference to Hippodamos]* (Athens, Melissa, 2015), pp. 169-183.

384 N. Gilman, *Mandarins of the Future: Modernization Theory in Cold War America* (Baltimore, John Hopkins University Press, 2003), p. 202.

385 Here I agree with many of Theodosis' points in his much more extended analysis of Rostow's work and its connections to Doxiadis. See L. Theodosis, *Victory over Chaos? Constantinos A. Doxiadis and Ekistics 1945-1975* (PhD dissertation Universitat Politècnica de Catalunya. Departament de Teoria i Història de l'Arquitectura i Tècniques de la Comunicació, 2016), pp. 65-72.

take place in successive stages. They shaped a vision based on the western welfare state model of the mid-20th century, in which the spread of technology would eventually lead to — in Doxiadis terminology — "ecumenization", or to Rostow's "the age of "high consumption". These concepts suggested a more or less homogenous 'urbanized' culture would become widespread. Both based their view of the future on a vision of continuous technological advancement. They also acknowledged the industrialisation of Britain as a crucial event, and assumed the automobile would promote widespread social mobility.[386] In the end, both visions were used to derive the corresponding economic policies or planning solutions. Undeniably, Rostow's book had a far greater impact, influencing economists and policy makers to promote investments in urban and industrial sectors, which were seen as the unique path, enabling economies to reach the "take-off" stage — the vital, ultimate step in achieving sustained growth. In this approach, only later would the traditional-rural sector begin to enjoy the benefits of growth. Meantime, it was acceptable that it "'might' become worse off instead of better."[387]

Both visions explicitly promoted a shift from traditional economies, and a reliance on what was seen as an inefficient agricultural sector to an industrial, urban and service oriented type of economy. Projecting this vision onto longer, and universal, histories of progressive evolution, urbanisation appeared to be an inevitable endpoint. However, their urbanisation models had notable differences. Rostow saw urbanisation and the accompanying investment in industrialisation as preconditions for future development, whereas Doxiadis' vision, directly connected to his 'organic' thinking, was underpinned by an assumption of a 'natural' tendency for people to develop denser and more complex settlements as they pass from a "nomadic food-gathering life […] into the era of agriculture" and from lower to higher population densities, until reaching the "urban stage".[388] "Ekistic evolution," as Doxiadis called it, served to explain an inexorable historical process of passing from primitive "non-

386 Doxiadis considered the cars as a disruption of human life in the cities and aimed to keep traffic out of neighborhoods. He nevertheless acknowledged their role in the evolution of cities: "[W]e can only say that the revolution of human settlements began in 1825 with the development of trains, and then spread trains and automobiles competed with one another and improved their technologies, and so turned the old type of settlements into the new ones." C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 120.

387 C. Hadjimichalis, *Uneven Development and Regionalism: State. Territory and Class in Southern Europe* (London, Croom Helm, 1987), p. 14.

388 C. Doxiadis, et al., "Techniques of Studying Density" *Ekistics*, 20, 119 (1965), pp. 199-207.

organised", to "organised settlement" (the "period of villages"); to static settlements (the polis period).[389] The phase of dynamic settlements, which Doxiadis placed at around the 17-18th century would be completed in the 21st century, when humanity would reach the final phase of an Ecumenopolis, and growth level off.[390]

In conceptualising Ecumenopolis from a universal/humanistic perspective, Doxiadis might be seen as diverging from Rostow in many ways. By understanding these 'urbanisation' processes as inherently dynamic and shaping interconnected settlements, Ecumenopolis was ultimately calling into question the distinction between urban and rural. Although primacy was assigned to the urban, its immediate and wider environment and their complex interconnections were still considered. In addition, Ecumenopolis consciously avoided the geopolitical assumptions that came with Rostow's economic agenda, which not only aimed to demonstrate the superiority of the western model to communism,[391] but also to present it as the only available path for future prosperity for 'underdeveloped' countries. In contrast, Doxiadis thought not only that settlement crises were universal in nature,[392] but that Ecumenopolis was a solution that could be implemented "irrespective of the country and the political system."[393] Although by transcending these global divisions, Doxiadis was, ultimately, overlooking the economic and geopolitical causes that sustained them as well as their continuing contribution to uneven patterns of development, the Ecumenopolis concept was moving decisively beyond territorial boundaries at the national scale. Economic agendas such as Rostow's targeted the national level, as well as other international attempts to formulate policy. Adopting a planetary perspective, Doxiadis tried to show not only that problems of settlements were 'universal' in nature, but also that it was imperative to contemplate the

389 By focusing on settlements as a universal index of world history, Doxiadis was keeping also avoiding allusions to place-bound cultural traditions, even though he didn't avoid using classical Athens and Greek *polis* as the model for the type of 'balance' that future Ecumenopolis will reach, albeit on a global scale: "The 'polis' of antiquity was a daily life system of equal people, and the human settlements of the future are going to tend in the same direction. In scale and in structure will be different. The new "City" of Anthropos will follow the laws of the past." C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 318.

390 C. A. Doxiadis, Ekistics: *An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p. 200.

391 See W. Rostow, *The Stages of Economic Growth: A Non-Communist Manifesto*, (Cambridge, Cambridge University Press, 1960).

392 Doxiadis highlighted that "technological development does not necessarily produce better settlements." See C. Doxiadis, Ekistics: *An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p. 269.

393 See *Ecumenopolis: Towards a Universal Settlement*, 1963, 154. Archive files 2666, Doxiadis Archives.

transnational social, spatial, organisational and environmental consequences of a large-scale transformation of the post-war predicament. Ecumenopolis signalled the radical renewal and expansion of the Ekistics agenda: from a planning framework dedicated to the shaping of the national territory and the 'survival' of the Greek nation, to Doxiadis' campaigns to 'save' humanity in a post-Cold War world.

4.3 Ecumenopolis' shifts

Ecumenopolis was the projection of an 'urbanised' planet which was anticipated to emerge around 2100, but, like any futuristic and utopian vision, it was very much grounded in its own time, both as a critique and as a manifestation of the intellectual climate of the 1960s. For one thing, as Pyla showed, Doxiadis used Ecumenopolis' focus on global urbanisation to promote it as part of the UN's global agenda.[394] Participating in two UN meetings in 1963,[395] Doxiadis questioned the UN's 'developmentalist' bias by stating that problems of shelter and settlement were not exclusive to "underdeveloped or developing nations."[396] In speaking to architects and planners—including Ernest Weissman and Charles Abrams whom he had met in New Delhi in 1954—he underlined the importance of regulating the development of settlements and raised the issue of resource depletion. His call to reform developmental agendas was also introduced in another meeting, this time along with a proposal to establish a new UN agency (similar to UNESCO) focused on human settlements and their global problems. Such an agency, Doxiadis imagined was important, because as he argued elsewhere, "even after everyone has been fed and supplied properly in a world of peace we shall very likely discover one day that we have created around us a habitat with worse living conditions."[397] Although, this statement can be read as an ironic comment on the UN's capacity to eliminate poverty and war, Doxiadis was criticizing the lack of a coordinated approach to the complex problems of settlements. Addressing international audience, at the time, Doxiadis combined the description of Ecumenopolis to these calls, in usual militant tone: "If we want to achieve our goals, we need an army and this army has to be great and has to

394 See P. Pyla, "Planetary Home and Garden: Ekistics and Environmental-Developmental Politics", *Grey Room,* 36 (2009), pp. 6-35.

395 The first was the meeting of the Economic and Social Council (ECOSOC) convened its first Committee on Housing, Building, and Planning in New York and the UN Conference on the Applications of Science and Technology for the Benefit of Less Developed Areas in Geneva. *Ibid*.

396 See C. Doxiadis, "CLOSING REMARKS", *Ekistics* 15, 90 (1963), p. 253.

397 C. Doxiadis "Ekistics and Regional Science", *Ekistics*, 14, 84, (November 1962), p.199.

include the best talents that humanity has today […] the best of the younger generation, the one which will have to carry out the battle for Ecumenopolis."[398]

Ecumenopolis was also shaped by exchanges of scientific ideas and different epistemologies of the time. The UN's response to his pleas came about ten years later, when the UN General Assembly established an International Habitat and Human Settlements Foundation in January 1975. Meantime, Doxiadis intensified his efforts to present the settlement crisis as the reason for a global mobilisation of the scientific community. Ecumenopolis' assumptions informed the cross-disciplinary exchanges which took place at the Delos Symposia, initiated by Doxiadis in 1963.[399] Proclaiming an ambitious reformist agenda of global developmentalism and uncontrolled urbanisation, Ecumenopolis' ambivalent claims found resonance in different intellectual and popular concerns of the day: overpopulation, the depletion of natural resources, Cold-War militarisation and the fear of a nuclear war, urban social tensions.[400] In this intellectual climate, the Delos Symposia hosted discussions among economists, biologists, media theorists, architects, engineers, planners, anthropologists, and sociologists on topics related to human settlement. Apart from a close circle that remained committed to the Symposia goals, the participants changed. But the global nature of these scientific debates, and the commitment to scientific and 'humanistic' values, remained.

Against this background, Ecumenopolis' assumptions were criticized by the more vocal members of the Delos Symposia. At the same time, they were also informed by the rich intellectual environment which helped reformulate the project. The changing titles of the project indicate a shift from an earlier 'prescriptive' to a later 'descriptive' approach. At first, Ecumenopolis was named "city of the future", or "universal settlement" (1961), and "settlement of the future" (1963), reflecting Doxiadis' earlier "call to arms" which aimed to mobilize against an anticipated world disaster by utilizing planning's capacity to "form the ideal city."[401] Early on, the 'proper' planning of Ecumenopolis took priority, reflecting Doxiadis Associates' focus on finding physical outlets for the dynamic expansion of existing urban centres, and delineating zones and spaces for human interaction within expanding

398 *Ecumenopolis: Towards a Universal Settlement*, 1963, 162. Archive files 2666, Doxiadis Archives
399 Delos Symposia were held annually.
400 For a well-rounded analysis of these discussions, see P. Pyla, "Planetary Home and Garden: Ekistics and Environmental-Developmental Politics", *Grey Room,* 36 (2009), pp. 6-35.
401 *Ecumenopolis: Towards a Universal Settlement*, 1963, 161. Archive files 2666, Doxiadis Archives.

settlements. As a result, Ecumenopolis was portrayed as a kind of 'megastructure' formed by new transportation links and nodes that formed a "new network" superimposed on existing patterns of settlement:

> There is no reason for keeping the present settlements as the hearts of a new network of a new type of settlement. The reasonable solution is to create the new centres in such a way that they will serve us in the present and the future in the best possible way […][402] **(Fig. 4.2)**

In these earlier stages, physical structure was seen as the agent of change and the emphasis was placed on transportation infrastructures which would support the shaping of a global "ekistic network" that would eventually optimise communication among settlements at different scales. After a decade, the latest and most complete publication of the project declared Ecumenopolis, the "inevitable city of the future" (1974). As the culmination of the City of the Future project which had initiated in 1961, this book also aimed to validate the whole project, its methodologies, assumptions and results. In this light, it was much more focused on proving the accuracy of a distant forecast:

> [E]very other attempt to look into the future of human settlements has been an attempt to work out someone's personal prediction or vision. We are not doing that at all, but trying to work out what is actually going to take place.[403]

In this extensive publication of 450 pages, there was only a small chapter devoted to a representation of Ecumenopolis, and it further came with a warning that "it is unlikely to be precisely the image which will emerge eventually."[404] The study concluded with vague diagrams of global networks, which emphasized interconnectedness without specifying the kind of infrastructures these would consist of. **(Fig. 4.3)** The same study hinted that in future, most traffic networks would be underground, illustrating the uncertainty about physical infrastructure and its future role. In this sense, the 'inevitable' Ecumenopolis was presented as an attempt to forecast, to conceptualize, and to shape techniques, to map not its physical

402 *Ibid*
403 C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 157.
404 *Ibid*, p. 340.

form, but its geographic footprint. **(Fig 4.4)** Eventually, the goal was not how to plan but rather how to "guide" global society through accelerated development: "Our great task is to develop the ability to understand and to guide the formation of terrestrial space, which is changing shape under the influence of the new development forces directed by man."[405]

This shift was an outcome of how the project was informed by the broader intellectual climate and by exchanges among different scientific disciplines involved in the Delos Symposia. In meetings which took place every summer in Greece, Doxiadis' preoccupation with physical planning and infrastructure was contested by different participants, as Pyla showed, eventually leading to significant revisions, such as making more explicit the "interdependence of the "natural" and "man-made" worlds."[406] In several ways, the Delos symposia reflected broader emerging critiques of post-war planning culture manifested in a series of key publications that appeared in the 1960s: Jane Jacob's The Death and Life of Great American Cities (1961) which emphasized the limitations of technocratic planning in urban life and Lewis Mumford's *The City in History* (1961) which repeated the importance of neighbourhood and the regional scale; Ian McHarg's *Design with Nature* (1969) which turned attention to landscape design and environmental protection; Henri Lefebvre's *La Révolution Urbaine* (1970) which paved the way for analyses on the capitalist drive behind urbanisation; and André Gunder Frank's *Capitalism and Underdevelopment in Latin America* (1972) which expanded earlier critical economic analyses of Western bias in developmental discourses. Even more direct were the links between the Delos symposia and UN conferences and workshops. Some Delos attendees participated in both, among the most important being the 1972 United Nations Conference on the Human Environment, which manifested the growing importance of environmental protection.[407] Against these broader intellectual shifts, Ecumenopolis tried not only to reconcile varying understandings of the global future, but also to resolve the ambivalence between economic growth, technological development and protection of the environment:

> We stand midway between the prophets of doom and the incurable optimists; we

405 C. Doxiadis "Ekistics and Regional Science" *Ekistics*, 14, 84 (November 1962), p.199.

406 See P. Pyla, "Planetary Home and Garden: Ekistics and Environmental-Developmental Politics", *Grey Room,* 36 (2009), pp. 6-35.

407 For example the tenth Delos conference which took place later in the year echoed many of the themes raised in the 1972-UN meeting. *Ibid*, p. 21.

> believe that those who foresee total disaster underestimate technology, and those who believe that technology can solve everything underestimate the size of the problem in terms of quantities and the time dimensions[408]

Ecumenopolis thus reaffirmed Doxiadis' and Papaioannou's faith in techno-scientific approaches and their capacity to effectively manage environmental problems, resource shortages, and socio-political crises. It also upheld the Third World's 'right to development'[409] at a time when western institutions were contemplating restricting development policies before these had even reached less-privileged nations. So, Ecumenopolis envisioned a more egalitarian redistribution of resources on a global scale while extending technocratic solutions to the management of nature.[410] These shifts crystallised in the vision of Ecumenokepos, the global garden, which was explored at the end of the 1960s, formalizing the idea of Ecumenopolis as a complex overlap of built and unbuilt areas:

> Ecumenopolis will be an interlinked system which will include settlements of every size and landscape of every type, from the intensely cultivated to the completely wild and untouched, within its structure.[411]

Ecumenokepos essentially exemplified an attempt that went beyond the goal of measuring global resources and their impact on the shaping of human settlements. In the name of protecting 'nature' it created a zoning system which divided the whole planet into three large areas: the habitation zones (2.5%), the productive/cultivation zones (15.5%) and the natural areas (82%) which were further divided into a range of twelve zones permitting varying degrees of access by humans and accommodation of various activities.[412] Regulation and zoning at a global scale seemed the only way to keep protect the planet from uncontrolled

408 See C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 174.

409 It was stated: "The low-income areas, however are faced with a terrible choice: they are asked to divert resources to prevent environmental deterioration when they need everything they have to raise the standard of living for their growing population. They are expected to act altruistically in a world which has shown them remarkably little altruism." C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 323.

410 P. Pyla, "Planetary Home and Garden: Ekistics and Environmental-Developmental Politics", *Grey Room,* 36 (2009), pp. 6-35.

411 See C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 343.

412 See C. Doxiadis, 'Global action for Man's Water Resources.' *Ekistics*, 37, 218 (1974), pp. 1-4.

development, implying also that global urbanisation was an uneven process generating imbalances along the way. **(Fig. 4.5)**

4.4 (Im)balances of planetary development

The Ecumenopolis project made two key assumptions: firstly, that global development would be the outcome of "compound growth" leading to a continuous increase in population, income, social integration, and urbanisation. Secondly, these processes would eventually lead to the "equitable distribution of wealth and power,"[413] the stabilisation of population growth and the creation of an international society inhabiting a 'static' but 'balanced' global settlement.

> The present period of wildly accelerated changes will be followed by a period of equalization, lasting about half a century, in which the uneven developments and disparities gradually will be substantially reduced.[414]

In this approach, a period of accelerated change was presented as the catalyst that could eventually lead to global equality. While Ecumenopolis belonged to the "Remote Future" (2075+) the same study shed light on a not-so-balanced "Near Future" (1975-2000) where not only would growth and urbanization rates peak, but also pollution, the income gap, food, water and energy shortages, and on a "Middle Future" (2000-2075) where these crises would gradually ease. Not unlike the urban bias of economic agendas, the path to Ecumenopolis, was also legitimizing the idea that it was acceptable "that conditions of human life will grow progressively worse in settlements of all sizes" before they get better.[415]

Rather than being an object of planning or representing an image of the future universal city, Ecumenopolis focused on mapping the contours of the conditions for its emergence. The main goal of the project was to estimate the global population in 2100 and its distribution across the planet. This mapping assumed certain human-environment conditions and the existing settlement patterns. The following three assumptions were used. The first, called the "saturation approach" mapped the range of "habitable areas of the globe" based mainly on

413 See C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 236
414 *Ibid*, p. 339
415 *Ibid*, p. 272

climatic conditions, topography and water availability. Social, economic and political factors were thought to play a complementary role in shaping the contours.[416] After excluding zones of extreme climatic conditions (snow, deserts, high altitude, oceans) the project mapped various zones which could support more or less extensive "habitation". (**Fig. 4.6)** Habitation was thus used as an alternative term for "carrying capacity" in the same way biology or ecology use the term to depict the maximum number of a certain species that a given environment can support. On this assumption, an estimate of the maximum population capacity of the earth was made as well as an approximation of the population density each zone of habitability could support. The second approach was also to estimate the global carrying capacity of the earth based on the estimated levels of global resources. Assuming the redistribution of these resources, and also a certain level of technological advancement in food production, and recycling of water, energy, minerals, this "resource approach", according to the two authors, arrived at similar conclusions to the first method. Finally, the last method, called the "evolutionary approach" was, presumably, based on the "analysis of the dynamics of urban change" and what were understood to be successful existing "patterns of organization."[417] This method simply reaffirmed the main assumptions of the study, that gradually larger and larger complexes of settlements would be created resembling the structure of the "megalopolis,"[418] a term coined in 1960 by the French geographer Jean Gottmann, who also participated in several Delos symposia, to describe the network of settlements in the US Northeastern region. As the integration process continued, the study claimed, more "megalopolises" would emerge, and as these interconnected they would form "eperopolises", the last step before the creation of Ecumenopolis.

Doxiadis and Papaioannou claimed their results were valid since all three methods converged on the same global pattern of Ecumenopolis which was adjusted to three total population scenarios (20, 35, and 50 billion) and two timeframes 2100 and 2150. But while the map supposedly represented a future in which human-nature and income balances would be reached, in fact the study accepted that various sociopolitical crises would also be generated

416 *Ibid*, p. 171.
417 *Ibid*, p. 172.
418 See J.Papaioannou, Megalopolis: A First Definition, *Ekistics, 26, 152, (July 1968)*, pp. 32-59.

by the acceleration of the urbanization process and various adjustments to it. Such crises could include:

- rising unemployment levels among the peasant population because of the mechanization of agriculture and massive migration flows from rural to urban areas
- a greater "pressure for redistribution" of population at a global scale which could lead to considerable influx from low- to high-income areas leading to tensions at different scales without excluding the "possible use of force or even local wars"[419]
- an increase in "striking disparities between rich and poor"[420]
- an uneven impact in environmental deterioration between low- and high-income countries; a greater need for housing in low-income countries where the lack of funds would still make self-help housing the only solution
- and a "lack of organization to administer such large-scale settlements, which could lead to progressive loss of control and dehumanization of the urban environment."[421]

The study offered no solution to all these problems other than to raise the optimistic image of a balanced future which would be achieved through a trial and error process which would gradually lead to advances in global governance.

> All that Anthropos needs is greater public awareness of what needs to be done, and a more efficient global organization to help him achieve his goals.[422]

Ecumenopolis eventually appeared as a project of mapping potential socio-environmental crises and global "risks."[423] In this sense, Ecumenopolis was far from presenting an image of the balanced settlement of the future. Instead, it signalled the emergence of a global governmentality, which in the name of accelerated and global growth was mapping its impact

419 C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future* (New York, Norton and Company, 1974), p. 238.
420 *Ibid*, p. 328.
421 *Ibid*, p. 326.
422 *Ibid*, p. 174.
423 As Ulrich Beck highlights: "[r]isks concern the possibility of future occurrences and developments; they make present a state of the world that does not (yet) exist."See U. Beck,. *World at Risk* (Cambridge, Polity Press, 2008), p. 9.

on the population and the environment with the ultimate goal to "manage it away."[424] Disguising rather than elaborating on the risks of this accelerated growth, the project continually envisioned the future using the rhetoric of balance. Communicated with different meanings, such as, "harmony, moderation, equitability, and a type of order" it exemplified, as Pyla showed, a commitment "[to] the reform of rational planning rather than a radical questioning of its morality and principles."[425] Although, the maps of 2100-Ecumenopolis envisioned the footprint of a global "middle-class" they were eventually tracing the liminal conditions of inhabiting the planet tracing the geographies of inequality and the socio-environmental crises of subsequent decades into the 21st century.[426]

4.5 From the organic to the system

The optimistic vision of the future (2100) and the pessimistic view of the crisis-ridden acceleration years (1975-2000) were products of the same reasoning and thus equally valid. These emerged out of the same quantification methods and statistical models which assumed that various categories such as population, resources, and income can be measured independently, and then somehow correlated so as to arrive at certain conclusions. Although this methodology was celebrated as a sign of ethical neutrality and objectivity, the optimistic scenario prevailed also by subjectively overlooking major crises (e.g. a new world war) and considering small-scale crises as acceptable reactions to a 'natural' global adjustment process to growth. By consciously opting for the 'optimistic' evolutionary scenario, Ecumenopolis, expressed an attempt to overcome environmental determinism and neo-Malthusian views and their potentially repressive measures to control population growth expressed in similar

424 See P. Pyla, "Planetary Home and Garden: Ekistics and Environmental-Developmental Politics", *Grey Room,* 36 (2009), p. 21. See also a comparison of Doxiadis and Fuller's world management approaches in N. Katsikis, "Two Approaches to "World Management": C.A. Doxiadis and R.B. Fuller", in N. Brenner, ed., "*Implosions/explosions" Towards a Study of Planetary Urbanization* (Berlin, Jovis, 2014), pp. 480-503.

425 P. Pyla, "Planetary Home and Garden: Ekistics and Environmental-Developmental Politics", *Grey Room,* 36 (2009), p. 21

426 The idea of mapping resources and other environmental aspects on a global scale continues to this day as a key activity of institutions such as UN. Intrinsic to these studies is mapping liminal conditions (e.g. water scarcity) which informs global environmental and aid policies. See for example the way the UN FAO maps the range of water availability on a global level in water stress, water scarcity and absolute scarcity at a range of 1,700 – 500 m3 per person. http://www.unwater.org/water-facts/scarcity/#

studies dealing with global population-resource relations.[427] Drawing however on similar methodological assumptions, the study was taking part in a broader systematization and institutionalisation of scientific and popular enquiries on a global scale. [428] By presenting the world still more as a closed finite totality, these approaches implied that problems of growth, such as environmental disasters and social crises could be averted: firstly through, presumably, a more sophisticated modelling of the global 'system' and then by its recalibration, eventually granting support "[to] a capitalist economic system that [was] under severe stress."[429]

The notion of the system, more than anything else, became Ecumenopolis' key analogy. While "networks" were also crucial as an analogy expressing the world's interconnectedness,[430] it was the logic of the system that helped to conceive Ecumenopolis' inherent complexity:

> So what we are really trying to do is to examine the whole system of our life by first looking at several of the various elements of it, and then by trying to fit them together so that we can see what their overall balance is.[431]

By describing Ecumenopolis as a system, Doxiadis and Papaioannou were evoking once more assumptions on which Ekistics was based upon that of the necessity of analysing and measuring an emerging totality. The role of scale was crucial in analysing the planetary totality. They argued that the larger the spatio-temporal scale, the more accurate the predictions, as these need not account for the fluctuations and variability of the micro-scale and the locale. Thus by looking at the process of development on a global scale, it rendered population and resources not as 'stocks' but as 'flows' that were part of the same self-regulated system, which tended towards 'balance'. At this scale of abstraction, the

427 See Harvey's critique of the "ethical neutrality" of studies, such as 1972's *The Limits to Growth* where he emphasized the "political implications" of these studies. D. Harvey, "Population, Resources, and the Ideology of Science"*, Economic Geography*, 50, 3 (July 1974), pp. 256-277.

428 There other world models around the same time, such as World3 developed by the Club of Rome.

429 D. Harvey, "Population, Resources, and the Ideology of Science"*, Economic Geography*, 50, 3 (July 1974), pp. 256-277.

430 Simon Richards makes a critical argument on overemphasizing networks in the scholarship of Doxiadis over other elements that were also important in his work. See S. Richards, "Halfway Between the Electron and the Universe: Doxiadis and the Delos Symposia" in G. Adler, T. Brittain-Catlin and G. Fontana-Giusti, eds., *Scale: Imagination, Perception and Practice in* Architecture (London, Routledge, 2012), pp. 170-181.

431 See C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future,* (New York, Norton and Company, 1974), p. 159.

transformation process was disassociated from the local specificities in order to visualize the emergence of an "ecumenic system of life in the dimension of the whole globe."[432] Faith in the efficacy of systems thinking for shaping supra-national governmentality was considered key for the gradual abolition of the nation-state: "We therefore consider it very likely that several states will become unified into well-operating systems."[433]

At the time, systems' thinking was also a dominant field of scientific enquiry for planning, generally referring to a set of people, events and ideas that form a coherent whole through a structured pattern of interrelationships among its elements.[434] In this case it was also closely linked to Doxiadis' earlier inspiration from the organicist ideas of Walter Christaller. Much as before, the idea of managing population and resources through claims of 'optimisation', 'economies of scale', and 'equilibrium' was again projected on a global scale. Unsurprisingly, Doxiadis attempted to reconnect with Christaller, inviting him to Athens in 1962, and then to the Delos Symposia.[435] In the post-war quantification ethos of geographical thinking and regional science, Christaller's theories were reintroduced in the Anglo-American context (his 1933 thesis was translated into English for the first time in 1966.) Ekistics' links to Christaller's thinking allowed Doxiadis to connect with the post-war techno-scientific thinking of systems theory, which had a fundamental impact on science and architecture among other disciplines.[436]

What is more important in this realization is not so much to emphasize further the overlooked connection between Doxiadis and Christaller which helps to better understand Doxiadis and DA's work. Rather, it is important to explore the impact of systems thinking in Doxiadis work in the 1960s. Christaller's organic thinking was advancing an awareness of a dynamic reality,

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432 *Ibid*, p. 356.

433 *Ibid*, p. 241.

434 See L. Simutis, "Working within the System: a Review of Systems Approaches in Urban Studies", *American Studies*, 14, 1 (1973), p. 110.

435 Christaller was first invited to DA headquarters in July 1962 (See DA Newsletter, 2, 7 (July 1962)) and later at the Graduate School of Ekistics when he also joined the firm's New Year's celebrations (See DA Newsletter 2, 12 (December 1962)). He participated in the First and Third Delos Symposia, in 1963 and 1965, respectively. Immediately afterwards, Doxiadis expressed his disappointment with Christaller's performance in the meetings and asked that he not be invited back; but correspondence continued and Christaller also wrote articles on Ekistics. Archive files 6133, Doxiadis Archives.

436 For a description of post-war organicism in architecture, art and design see R. Martin, *The Organizational Complex: Architecture, Media and Corporate Space* (Massachusetts MIT Press, 2003). For some references on system thinking in history of ecological design see L. Kallipoliti, "History of Ecological Design", *Oxford Research Encyclopedia of Environmental Science* (Oxford University Press, April 2018)

the study of which could help extrapolate laws that would presumably lead to rationalising and optimising conditions for life. In a similar way, systems theory was also advancing claims for even more sophisticated modelling, and, presumably, seamless control of a complex reality. Becoming more widespread, systems thinking impacted different disciplines in the 1960s, from geography to biology, so that its claims generated transformative processes within these disciplines. Critical voices emerging in the mid-1970s were not so much aiming to refute all of these claims, but aspired to setting (some) of them free from their corporate and techno-scientific assumptions. So although systems theory was criticised for evoking abstraction, social control and human alienation, it also evoked flow, circulation and continuity which promised also to overcome categorical divides, such as human-nature, human-non-human; urban-rural; divides which persisted in disciplinary thinking and in the real world. Donna Haraway's idea of the 'cyborg' expressed the potential emerging from systems theory: "'Networking' is both a feminist practice and a multinational corporate strategy—weaving is for oppositional cyborgs."[437] In this sense, abstract categories, produced under the systematization of scientific and theoretical thinking, were not 'natural' framings of reality but could also be claimed for other political agendas.

We argue that adopting systems' thinking in addressing the methodological challenges of the Ecumenopolis project, Ekistics underwent an epistemological transformation which led to the reformulation of earlier premises without compromising, the much sought-after scientific unity which was based on the presumption of a holistic and comprehensive approach to settlement planning. This reconfiguration of the Ekistics agenda, we further argue, was reflected on the issue of scale. By rescaling the programming and planning of settlements, Doxiadis and Doxiadis Associates could manage the acceleration of urbanisation on a global scale. In other words, if the creation of Ecumenopolis was based on unrelenting widespread forces it was only by managing its scalar effects that the planner would be able to maintain some power in protecting nature and human life. Working upscale and downscale, and by regulating the connections from one scale to the other, Doxiadis claimed, one could "achieve balance at every scale, from the single house with its garden to the entire globe."[438] By

437 I follow Arindam Dutta's analysis on Haraways' concept of the "cyborg". See A. Dutta. *The Bureaucracy of Beauty: Design in the Age of its Global Reproducibility* (London, Routledge, 2006), p. 216.

438 See C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future,* (New York, Norton and Company, 1974), p. 340.

reconceptualising the global and the local through the perspective of scale, the following statements appeared logical: "So on a macro-scale the Ecumenopolis will be dynamic, while on a micro-scale it should remain stable and static."[439] In global development, the field of intervention was shifting from the horizontal to the vertical axis where the implied optimisation of human settlement was to take place.

What is expressed in these statements is, not only the planners' concern about how to allow for economic, social, spatial growth to "trickle down" to lower scales, but also how to ameliorate its presumed negative, dehumanizing spatial impact at those scales closer to the local, the body and to social interactions. For Doxiadis and Papaioannou this problem was 'resolved' in two ways. Through a reaffirmation of the importance of a hierarchical logic inherited from Christaller, Doxiadis incorporated the former's idea of a hierarchical classification of service centres into the Ekistics Logarithmic Scale (ELS) combining spatial and demographic parameters. **(Fig. 4.7)** ELS became a key element of his Ekistics theory and was central to DA's multi-scale approach and a key planning tool the firm consistently used in several urban and rural projects in different countries.[440] In two out of the four research projects on which ACE was focusing, the City of the Future (1961) and the Human Community (1963), which focused on Athens, scale was the key problem. Among the main outcomes of these research programs was to offer theoretical and empirical verification of the hierarchy concept and directly connect the idea of scales with that of neighbourhood and urban communities.[441]

These two programs expanded Christaller's focus on mid-sized settlements, both upwards and downwards, eventually distributing human settlements along a universal and mathematical scale that ranged from the smallest scales: the room, the house, the neighbourhood, all the way up to the largest scales: the megalopolises, the continents, and

439 C. Doxiadis, *Ekistics: An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p. 431.

440 For the application of this tool in Doxiadis practice, See for example P. Pyla, "Architects as Development Experts. Model Communities in Iraq and Syria", in P. Pyla, ed., *Landscapes of Development: The Impact of Modernisation Discourses on the Physical Environment of the Eastern Mediterranean* (Cambridge, Harvard University Aga Khan Program, 2013), pp.167-189.

441 See an extensive analysis of the HUCO project: L. Theodosis, *Victory over Chaos? Constantinos A. Doxiadis and Ekistics 1945-1975* (PhD disseration, Universitat Politècnica de Catalunya. Departament de Teoria i Història de l'Arquitectura i Tècniques de la Comunicació, 2016), pp. 264-285.

Ecumenopolis.[442] This approach had a strategic value for Doxiadis because Ecumenopolis and the technocratic framework of Ekistics were scrutinized in terms of the concerns and priorities of other disciplines within the Delos Symposia. Maintaining the coherence of Ekistics' theory and practice was crucial at a time when the Ekistics' book was getting published in 1968. These two projects aspired to reaffirm the relevance of mathematical/geometrical models and provide empirical verification of these theories by studying a real and 'unplanned' urban environment, such as Athens. Papaioannou, the director of ACE, had a central role in these research programs, which also aimed to show how by "comparing the organisation of the living world with that of the man-made one" one could study "hierarchical systems of organisation." He strongly defended the results of ACE's project almost twenty years later:

> Research in ACE has underlined the validity of CPT and its septimal hierarchical organization-a remarkable feature consistent and continuous throughout such an enormous scale differential in Ekistics-from the smallest unit in architectural organization, which is in the order of just a few centimeters, to Ecumenopolis i.e the entire Earth which has a circumference of 40.000km or a surface of 510 million km.[443]

By affirming the idea of underlying 'natural' scalar order, these studies were not only offering coherence to Doxiadis' Ekistic theory. They were also expanding the range of planning intervention, from the scale of the human body to the global scale, while introducing the notion of planning as a complex process to be managed in multiple spatial levels and across contexts. More importantly, they offered validity to DA's planning practice which was based on the assumption that by 'fixing' the size of settlements and population at certain scales, planning could control, regulate and guide the development of space and of society.

Ekistics' focus on scale offered a bridge that connected the ACE's research approach and DA's planning priorities. It provided a classification system of settlement sizes which facilitated synchronic and diachronic contemplations on settlements. This reinforced the assumption that through a universal, ahistorical tool and technocratic approach one also could make valid judgements on settlements of the past in which human scale was, presumably, a given, and

442 For Ekistics theory and Ekistics Logarithmic Scale, see C. Doxiadis, *Ekistics: An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p.134.

443 See J. Papaioannou, "Scale Perception in Ekistics", *Ekistics,* 60 (1993), pp. 362-363.

thus to draw inspiration for contemporary planning.[444] Moreover, Ekistics' scales merged population and settlement dimensions, and provided a hands-on planning instrument which operated also as a communication device that sustained the centralised operation of DA's international office network. By operating as a device for abstracting, systematizing and ultimately for transferring knowledge from the central office in Athens to the local offices and vice versa the intended effect was a 'seamless' planning process. Acting also as a 'portable' knowledge system for DA's staff, it facilitated two-way communication between the office hierarchy and the office network.[445] **(Fig. 4.8)** It not only enhanced mobility within the firm's international structure but also allowed cross-disciplinary exchanges, among architects, planners, engineers and economists.[446] Used as a standardising rule for calculating population and spatial dimensions, it provided a framework for measuring other crucial dimensions, such as construction costs for housing, utility networks, and social and technical infrastructure.

Ekistics' scale expressed Doxiadis' fascination with scientific 'unity' aimed at the development of a universal language and tools to unite different scientific disciplines. Gradually Ekistic scales were extended into an even more comprehensive tool to address different complexities within the study of settlements. **(Fig. 4.9)** This was done by adding more and more categories developing Ekistics into a data-driven planning approach which presumably would allow it to address the complexities of the built environment while still considering social aspirations, albeit in an abstract way. Ekistics' scale was expanded into Ekistics' grid which incorporated Doxiadis' five Ekistics elements—nature, man, society, shells and networks—and then led to the even more expanded Anthropocosmos (namely Human world) model where time was also introduced together with a differentiation of the "feasible" and the "desirable."[447] **(Fig.4.10)** By building even more data-driven tools Doxiadis and the ACE were responding to this tension between the drive for systematization and concern for its impact in planning and society. The introduction of computers and mathematical modelling for planning issues, such as traffic circulation, and in research on human settlements further

444 See the analysis of the Ancient Cities research project in M. Zarmakoupi, "Balancing Acts Between Ancient and Modern Cities: the Ancient Greek Cities project of C. A. Doxiadis", *Architectural Histories*, 3, 1 (December 2015), pp. 19, 1-22.

445 Doxiadis' accompanying memo for 1969-Ekistics pocket cards stressed: "They need to be used by all associates in any circumstance […] they should have them in their pockets or their wallet or diary or on their desk." Archive files 25047, Doxiadis Archives.

446 Confirmed to the author by the economist John Paleocrassas during an interview, 7 August 2015.

447 See C. Doxiadis, "Anthropocosmos: The World of Man", *Ekistics*, 22, 132 (November 1966), pp. 311-318.

supported the faith that greater sophistication in data collection and processing could expand planning capacities relative to the complexities of dynamic urban phenomena while maintaining a rhetoric of commitment to human needs and scales.

4.6 'Frictions' on scale

These theoretical and scientific developments were also inspired by discussions at the Delos Symposia which confronted these issues from different perspectives. In trying to reach consensus among contrasting opinions these debates often highlighted anxiety over the positive and negative aspects of urbanisation and their "balanced" treatment by planners and other scientists. Echoing Doxiadis' conflating spatial dimensions with classification systems the declaration of Delos Seven emphasized:

> World-wide settlements must first be thought of in terms of the organization of small communities. We should then forget the term 'city' and think of a matrix that could cover the whole world or be subdivided into regions, but certainly not into areas that are as arbitrary and unreasonable as the present administrative boundaries of cities.[448]

At the same time, this declaration incorporated views on the non-physical impact of interconnectedness, echoing some of the Delians' discontent with how physical planning was considering communities specifically through traditional forms of social proximity and face-to-face interaction:

> [T]he next move must be improved systems of transportation and telecommunication that can remove their isolation and bring in not only physical and financial inputs, but also the information inputs required for transforming society. [….] This is an example of how the new, advanced technology is no longer confined to optimum utilization in large centres of population, but permits dispersal and new freedom that was impossible earlier.[449]

Even though Marshall McLuhan did not attend the seventh Delos Symposium, the above

448 See "Discussion at Delos. The Scale of Settlements and the Quality of Life", *Ekistics,* 28, 167 (1969), p. 280
449 *Ibid*.

extract echoed his views on how technological advances could support a global community through communication media.[450] Highlighting how electronic technology had resulted in the "speed-up of information that reduces the planet to the scale of the village" McLuhan was advocating that the spread of technology was not necessarily aligned with centralisation and "large agglomerations of population", ultimately, downplaying the role of embodied interaction.[451] McLuhan's emphasis on uninterrupted "flow of knowledge" was hailed by the rest of the participants, because just like planetary urbanisation, it was seen as a move towards greater mobility and freedom and an opportunity for anyone to "exercise citizenship at different levels in his planetary society."[452] At the same time, typical of the recurring contradictions, the same declaration highlighted that: "[the] need for direct personal contacts should be enhanced and not diminished by the modern network of communication" expressing also the importance of maintaining privacy, intimacy and social interaction and upholding quality over quantity by filtering information flow.

Due to anxieties about global urbanisation, Doxiadis' faith in physical planning and the role of spatial interventions in changing social conditions was attacked (from techno-scientific, anthropological, and sociological perspectives because of Ekistics' 'universalist' and humanist assumptions. For example, the sociologist Suzanne Keller, who was also involved in ACE's research, emphasized during the seventh Delos Symposium that "the calculus of human scale distance must include one or more of these other dimensions –functional, psychological, and social distance—to make the seemingly simple physical yardstick humanly viable."[453] By raising questions of contextual, symbolic, social and gender differences, these critiques challenged the very definition of the 'human' trying to move away from the hierarchical, mechanical, and abstract, to the more "relative and malleable", as Keller claimed, understandings of spatial and social categories.

These critiques were informed by a changing intellectual and political climate. The events of summer 1968 (of May 1968 in Paris) brought to the fore — and to the Delos symposia — issues of politics, public participation in planning and the need for meaningful responses to

450 These views was shared also by Buckminster Fuller.
451 "Need For More Balance In The Flow Of Communications", *Ekistics,* 22, 131 (1966), pp. 273-285.
452 *Ibid*.
453 See S. Keller, "The Human Scale in Megalopolis"*, Ekistics* 28, 167 (1969), p. 463.

the "impersonal effects" of urbanization, modernist planning and technology and the reintegration of social groups into political processes.[454] Delos participants again criticized the planning and bureaucratic processes that kept people away from decision making, seeing the student protests and urban unrest in Paris, Tokyo, and Washington, in their typically ambivalent fashion, saying either that it was a call to "find a compromise between human dignity and impersonal technology" or that "we have sufficient technical controls to build a decent society—but we are not doing it."[455] Rather than losing their optimism about the prospects for an interconnected world, these debates expressed a cosmopolitan attitude where some of the Delians appeared both as the 'enlightened' intellectuals contemplating the challenges of global urbanisation and as the citizens of an emerging global culture.[456] In her closing argument at the 1969 Delos Symposium, Keller emphasized:

> I would like to retitle my paper and call it the many human scales in megalopolis. And if you ask me what model of man I would choose to observe and study so as to help develop such scales, I would vote for the world traveller […] This type of person, as remote from the rooted peasant image of a man, as the world of tomorrow is from that of yesterday, may currently be observed in all the airports of the world […] Multilingual, able to move through unknown terrains without terror, able to respond fairly flexibly to differences in schedules and customs, far more aware of different life system and less dogmatic about erstwhile absolutes than his pre-metropolitan brother, he is perhaps the best available example of what is possible and not possible to change in human nature in a relatively brief span of time.[457]

Perhaps, behind the apolitical figure of the "world traveller" one could trace Doxiadis' profile. In the 1960s, he was constantly on the move living and working between hotels, airports, and different offices, followed by and generating trails of notes, papers, and memos in his attempt

454 In the 1968 meeting the participants declared their political responsibility: "Some of us have come fresh from the impact of tumultuous demands for change, in Paris, in New York in Tokyo. We now recognize that planning for human settlements is essentially a political process […]" See A. Toynbee, M. Mead, R. Meier, et.al, "Points Made in Discussion", *Ekistics,* 26, 155 (1968), pp. 330-332.

455 The different points made in this discussion were not associated with specific participants.

456 A group of the participants in Delos Symposia formed the World Society for Ekistics (WSE) was conceived at the 1965 Delos Symposium. The Society was inaugurated in 1967, and its founding members included Doxiadis and Fuller, as well as Jean Gottmann and Margaret Mead.

457 See S. Keller, "The Human Scale in Megalopolis", *Ekistics,* 28, 167 (1969), p. 463.

to coordinate the vast Doxiadis Associates' office network, which crossed contexts and geographical scales. But perhaps because of his frequent contact with the field and the intricacies of the profession as witnessed by DA in different contexts, Doxiadis, in contrast to some other Delians, was suspicious of this kind of scientific cosmopolitanism and its potential to offer any concrete solution to socio-political crises.[458] Doxiadis was absorbing the critiques of other participants in Delos Symposia, to reaffirm his own assumptions, and actively participated in these debates to turn attention to the spatial and planning aspects of global development. It seems Doxiadis hoped that stimulating such international scientific debates could finally lead to an acknowledgement of how the problems of settlements and their planning could be addressed on a global level and that Ekistics' multi-scale, decentralised planning approach could play a role.

Urbanisation for Doxiadis was thus no longer about creating autonomous cities and towns. He was outward critical of the British "new towns" movement and any planning approach that lacked an understanding of the interconnections found in the networks of settlements Ecumenopolis was envisioning.[459] Urbanisation was also not about urban space per se, while the city was just another node and scalar unit among many others. Seen in terms of a 'natural' historical evolution, urbanisation was based on three assumptions: a) a technological evolution which enhanced communication and reduced time-distances; b) a universal human tendency towards larger integration and socialization; c) the primacy of a market-driven, self-optimising process which could lead to efficiency and economies of scale. All these conflated into an understanding of urbanisation as a socio-spatial process taking place irrespective of ideological, political or economic structures, expressing a planner's claim for a universal right of equal access to social and technical infrastructure, resources and enhanced social interaction. This vision was fraught with the inherent contradictions of its time.

Doxiadis rescaling of Ekistics towards Ecumenopolis, was emerging at a crucial point where—

458 This attitude can be traced not only in various discussions taking place in Delos Symposia and week seminars following the Delos meetings. See for example C. Doxiadis, et al. "Panel Discussion", *Ekistics*, 24, 145 (1967), pp. 440–443.

459 Together with British "New Towns", Doxiadis also considered satellite cities, new capitals as "important experiments in city building, [which] they have not and cannot enrich our knowledge and our experience to the degree necessary to meet the present need." See C. Doxiadis, Ekistics: *An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p. 48.

modernist and State—planning was coming under extensive critiques and revisions. Although Ecumenopolis responded to the post-1968 climate, trying to introduce ecological perspectives and social considerations to architecture and planning it was relying, even more, on managerial and technocratic approaches. In this sense, Doxiadis' emphasis on urbanisation was deprived of the critical lens of contemporaneous discourses which combined their critique on urbanisation with a review of the limitations of post-war technocratic planning. Reading Lefebvre's (1970) *La Révolution Urbaine*, Harvey shared his aspiration that a focus on urbanisation could lead to critical theoretical enquiries and, most importantly, urban practices that could eventually "confront the forces […] that push urbanization in directions alien to our individual or collective purposes."[460] But like Lefebvre, Harvey was suspicious of the abstractions and comprehensive claims in projects such as Ekistics/Ecumenopolis. Harvey questioned the "spectacular design-mysticism of Doxiadis" which although it spoke for totalities, eventually, "having to define fixed categories and activities it loses the flexibility to deal with the fluid structure of social relationships which exists in reality."[461] Such system-thinking approaches, Harvey argued, were appropriate for design/engineering problems (e.g. the optimising of a transport system) but they lacked the analytical breadth to conceptualise the "internal dynamics of industrial capitalism" that constrain efforts to envision and shape "an urbanism appropriate for [the] human species." [462]

At the same time, Ecumenopolis predicted the dynamics of global urbanization as it had taken place in the previous decades and even anticipated some of the broader themes that prevailed in discussions around globalization, such as, the "network society" and the "spaces of flows,"[463] the role of cities in a globalized economy,[464] the re-scaling of the state and urbanization process,[465] even, more recent discourses on regional and spatial planning.[466] Even though Doxiadis relied on State's role in regulating growth and promote environmental

460 See D. Harvey, *Social Justice and the City* (London, Arnold, 1971), p. 314.
461 *Ibid*, p. 303.
462 *Ibid*, p. 314.
463 See for example M. Castells, *The Rise of the Network Society* (Cambridge, Blackwell, 1996).
464 See for example S. Sassen, *The Global City* (Princeton, Princeton University Press, 1991).
465 See for example, D. Harvey, "*Globalization in Question*, *Re-thinking Marxism"*, 8, 4 (1996), pp. 1-17; N. Brenner, "Beyond State-centrism? Space, Territoriality and Geographical Scale in Globalization Studies", *Theory and Society*, 28, 1 (1998), pp. 39-78.
466 See for example, E. Soja, "From Metropolitan to Regional Urbanization", in T. Banerjee and A. Loukaitou-Sideris (eds.) *Companion to Urban Design* (London, Routledge, 2011).

protection, Ecumenopolis was also predicting the rise forms and scales of governance beyond the nation-state. Although these forms were not explicitly presented, Ecumenopolis seemed to be aligned to the critiques of the bureaucratic post-war state privileging techno-scientific solutions to social and environmental crises, thus, anticipating also the post-political forms of global expertise as it was framed by the neoliberal turn after the 1970s. Yet, as Katsikis, also shows, despite its limitations Ecumenopolis was still connected to an agenda of a "more balanced, socially just or democratic future for global human society" that may still offer alternative insights to the current neoliberal visions of global interconnection through market integration.[467]

This inherent ambivalence in the global urbanisation was also reflected in Doxiadis Associates projects in Africa, which the following chapters will focus on. This ambivalence was evident from the emergence of urbanisation as an international developmental agenda for the Third World and Africa especially, which had been circulating in the mid-1960s, between Delos' 'laid-back' Aegean cruises and the official United Nations experts' workshops. Barbara Ward, the British economist, who was one of the Delians' major advocates of Doxiadis, tied urbanisation to international developmental aid, bypassing the 1950s agendas for industrialisation and its alternatives:

> This may seem to contradict the earlier emphasis on *productive* investment in industry and in and agriculture. Certainly, they must not be downgraded but there are reasons for supposing that the impact of foreign aid in these fields could be the less immediate than in aid to urban development.[468]

By contemplating urbanisation's problems on a global scale, planners and experts challenged the western-bias of earlier developmentalism by rejecting the dichotomies of developed vs underdeveloped; industrialization vs agricultural development; modernity vs tradition. The reformed global expertise on Third World development was no longer understood through the logic of enabling change through continuity but through the idea of locally managing the social, political and environmental risks of an 'inevitable' global urbanisation.

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467 N. Katsikis, "Two Approaches to "World Management": C.A. Doxiadis and R.B. Fuller" in N. Brenner, ed., "*Implosions/explosions" Towards a Study of Planetary Urbanization* (Berlin, Jovis, 2014), p. 502.

468 See B. Ward, "The Processes of World Urbanization", *Ekistics* 18, 108 (1964), p. 279.

In this respect, the imperative of urbanisation as a solution to Third World developmental problems, was inherently ambivalent. Firstly, according to the western logic, Third World countries had the opportunity to avoid the mistakes of the urbanisation of the 'developed' nations. Secondly, by the same logic, not all Third World societies were ready for the "urban age." In this context, architectural and spatial strategies would focus on accelerating or decelerating urbanisation, while urban development visions (like Ward's[469]) would also overlap with counter-urbanisation strategies. Ward expressed this ambivalence quite clearly:

> [W]here developed towns are today is where the new settlements are likely to be in forty years' time after a massive investment in urban growth. […] Forty years ago, there were a few models hinting at the fantastic changes that have come over developed cities in the intervening years. Now the models exist and the cities coming up behind are in a position to judge whether this is what they want and, if they do *not* want it, to consider the alternatives.[470]

Not only could urbanisation take place without industrialisation, but it would soon be obvious that it could even take place without growth,[471] partly corroborating Ecumenopolis' forecasts of a global urbanisation trend, albeit in an uneven fashion, and followed by serious social and environmental crises on different levels.

The debates that took place between Doxiadis' Ekistics, ACE's Ecumenopolis, and the Delos Symposia in the 1960s and early 1970s also formed the backdrop to Doxiadis Associates' planning projects. In the following chapters we will examine how the above intellectual and

469 Barbara Ward's urban bias is illustrated in the following extract: "So much in farming depends upon increasing the receptivity of country men's minds. The process will not be quick and only to a limited extent can it be assisted by foreigners. In industry, foreign investment runs up against all kinds of local political, national and ideological difficulties. But massive assistance to urban needs could have an immediate impact, for it quietly improves the condition of people who are often the liveliest and most ambitious—as well as the most frustrated—citizens in the country. And it by-passes most issues of ideology and so forth since in every type of society, a large measure of urban development, especially in new towns, is the responsibility of *public* authorities.' See B. Ward, "The Processes of World Urbanization." *Ekistics,* 18, 108 (1964), p. 274

470 See B. Ward, "The Processes of World Urbanization", *Ekistics,* 18, 108 (1964), p. 274.

471 "Urbanization without growth" is used by Mike Davis to describe the phenomenon where cities in Asia and Africa continued to grow even when their economies were declining and urban unemployment was high. These trends had not only escaped developmental aid programs in the 1960s that aimed to contain them but they were further exacerbated by the fragmentary rural policies promoted by international organizations in the 1970 and 1980s along with broader economic measures. See M. Davis, "Planet of Slums", *New Perspectives Quarterly,* 23, 2 (2006), pp. 6-11.

research efforts to contemplate the scales and speeds of urbanisation manifested in different projects in Africa and how these scales and visions were re-negotiated and contested by other global, national and local visions. We will also consider how these projects might offer alternative insights to the impact of global urbanisation and how these may have informed the more cautious planetary vision of the 1974 Ecumenopolis and Doxiadis' late attempts to attach ecological perspectives to Ekistics.[472] These analyses will lead to conclusions that will further consider how Doxiadis' 1960s naturalisation of urbanisation may expose also some of the limitations of the current "new genre of popular 'urbanology.'"[473]

472 See C. Doxiadis, and G. Dix, *Ecology and Ekistics* (London, Elek, 1977).

473 See B. Gleeson, "Critical Commentary. The Urban Age: Paradox and Prospect", *Urban Studies* 49, 5 (2012), pp. 931-943.

5 Rural infrastructures in Sub-Saharan Africa

In the early 1960s, when more African countries received their independence, the question of urbanisation took firm hold alongside broader debates which continued to be framed by the dilemmas of industrialisation and agricultural development. In this context, the United Nations approached urbanisation in Africa with a characteristic ambivalence. On the one hand, urbanisation was seen as an inevitable trend whereby social interaction, communication and established social and political institutions could prompt individuals and local societies to escape "those traditional restrictions that hamper development."[474] On the other hand, the UN also stressed the negative psychological impact of urban living on individuals and families, such as how the move from village to town "exposes rural migrants to considerable mental strain frequently resulting in mental illness."[475] Within this artificial polarity, urbanization was conceptualized as both a process of social adaptation, and the manifestation of a broader transition in African societies from a 'traditional' past to an urban future. Thus, the UN considered urbanization an opportunity for African countries to introduce planning policies that could address the lack of social welfare, education, health and economic infrastructure in both urban and rural areas, so as to frame and regulate the challenges of an uncontrolled urbanization. These debates explored ideas of regional planning, decentralization, and counter-urbanization strategies as measures to regulate population outflows from rural to urban areas. [476]

474 UN Bureau of Social Affairs. 'Positive Aspects Of African Urbanization.' *Ekistics*, 23, 135, (1967), pp. 115-117.

475 Economic Commission for Africa. 'Recommendations on Urbanization in Africa.' *Ekistics,* 14, 84 (1962) p. 242.

476 UN Bureau of Social Affairs. 'Positive Aspects Of African Urbanization.' *Ekistics*, 23(135), 1967, 115-117.

Within this broad framework, some African leaders responded to the question of urbanization with great suspicion and ambivalence, clinging to imagined rural-based traditions and seeing them as moral compass for their countries' socioeconomic development. In this light, the urbanization process, was far more complex than UN debates suggested, as it was intertwined with processes of decolonization and nation-building, with economic planning and with each country's specific colonial legacy. This chapter focuses on Zambia — the former British protectorate of Northern Rhodesia —which, upon its emergence on the map of independent African countries in 1964, was already established as the "largest producer of copper in the developing world,"[477] with an extensive mining sector that lent the country the additional distinction of being among the most urbanised countries in sub-Saharan Africa. At the same time most of its population continued to practice subsistence agriculture, growing only enough food for themselves and their families. The contrast between highly dense urbanised areas and low-density subsistence rural areas made Zambia a paradigmatic case, exemplifying the exploitive nature of colonialism in Africa, its uneven development impact and the global economic dependencies that conditioned its postcolonial future. This uneven development pattern, which was inherited along with other legacies from the country's history as a white settlers' colony, became the focus of national political-economic agendas and Doxiadis Associates' spatial visions.

5.1 From Pan-African visions to nation-building

Development easily became associated with a postcolonial vision of national liberation and self-determination on an 'evolutionary' analogy that suggested a process of self-becoming and progress. African leaders such as Kwame Nkrumah, Julius Nyerere and Kenneth Kaunda, and even anti-colonial intellectuals, like Frantz Fanon,[478] embraced development as a project that would demonstrate the capacity of Africans to achieve harmony within nations, and to

477 S. J. Barton, *Policy Signals and Market Responses: A 50 year History of Zambia's Relationship with Foreign Capital* (Basingstoke, Palgrave Macmillan, 2016), p.39.

478 Fanon stated: "The Third World must not be content to define itself in relation to values which preceded it. On the contrary, the underdeveloped countries must endeavor to focus on their very own values as well as methods and style specific to them. The basic issue with which we are faced is not the unequivocal choice between socialism and capitalism such as they have been defined by men from different continents and different periods of time." F. Fanon, *The Wretched of the Earth*, New York: Grove, 2004, 55.

create their own image of Africas' destiny. Condemning colonialism not only for racial injustices but also for hindering Africa's historical progress by exploiting, suppressing or ignoring its potential, they saw development as a process that could, in turn, utilize material and cultural resources to remedy colonial injustices and benefit Africans. However, these emancipatory Afrocentric visions were founded on different understandings of how to reconcile African values with developmental agendas. Rather than furthering the Pan-Africanist visions from which they had emerged, they developed different trajectories within their respective national boundaries. During the mid-1960s, Nkrumah's vision of Pan-African unity was reframed by the alternative development visions of African socialists.

Nkrumah envisioned unifying African countries through a strategy of accelerated development. A coordinated effort for a coordinated development project promised to overcome "neo-colonial" financial interests which continued to constrain progress at the national level. His developmental vision went beyond regaining control of foreign prices on African cash-crop commodities (e.g. Ghana's cocoa), stating in 1966: "The answer must be industrialization […] [and] total mobilization of the continent's resources within the framework of comprehensive socialist planning and deployment."[479] In Nkrumah's Marxist-inspired vision, the key was control of the means of production, and promoting industrialization, the mechanization of agriculture, and most importantly, creating energy infrastructure — culminating in the emblematic hydroelectric Volta River Project.

Envisioning development as the key to winning economic independence on a national and continental level, Nkrumah understood humanist African values as a source of moral inspiration which could inspired Pan-African unification despite the continent's cultural, linguistic and religious diversity.[480] His industrialization project was funded partly through State control of the cocoa export trade; but it also invoked the supra-national rhetoric of Non-Alignment — Nkrumah's developmentalism relied on alliances and aid received from the West and the socialist world.[481]

479 Cited in A. Biney, *The Political and Social Thought of Kwame Nkrumah*. Springer, 2011, 128.

480 A. Monteiro-Ferreira, *The Demise of the Inhuman: Afrocentricity, Modernism, and Postmodernism* (Albany: SUNY Press, 2014), p. 65.

481 See for example, Ł. Stanek, "Architects from Socialist Countries in Ghana (1957–67): Modern Architecture and Mondialisation." *Journal of the Society of Architectural Historians* 74, no. 4 (2015): 416-442.

Unlike Nkrumah, Tanzanian leader Julius Nyerere, was critical of Marxism and skeptical about the appropriateness of industrialization and foreign aid for African economies.[482] As he claimed: "We, in Africa, have no more need of being 'converted' to socialism than we have of being 'taught' democracy. Both are rooted in our own past—in the traditional society, which produced us."[483] Aiming to develop a socialist economy through decentralization and cooperation in rural areas, Nyerere's vision of self-emancipation was based on the revival of those African values, presumably, found in 'traditional' society and village life. He announced an extensive program of rural settlement in 1962 which intensified after 1967, when Nyerere imposed a one-party state.[484] Cooperative or solidarity villages, the so called *Ujamaa*, were created as a nation-wide strategy aimed at establishing communal values and forms of cooperation, as well as decentralising education and health infrastructure. This program found support in international agencies like the World Bank, and also earned international attention as a promising socialist experiment in agrarian self-reliance.[485] Tanzania's 'villagization', which began as a voluntary process and became compulsory after 1973,[486] was disastrous in the long run — as James Scott, and others have shown.[487] Not only was the population unwilling to move, but these policies undermined decentralisation and communal participation, eventually resulting in the population being subjected to close state surveillance and force.[488]

482 On Julius Nyerere, see F. Cooper, *Africa since 1940. The past of the present*, (Cambridge, Cambridge University Press, 2002), p. 178

483 Cited in A. Monteiro-Ferreira, *The Demise of the Inhuman: Afrocentricity, Modernism, and Postmodernism* (Albany: SUNY Press, 2014), p. 67.

484 Nyerere announced this policy in 1967 in the so called "Arusha Declaration".

485 J. Moore, 'The Villagisation Process and Rural Development in the Mwanza region of Tanzania', *Geografiska Annaler, Series B, Human Geography*, 61, 2, (1979), pp. 65-80.

486 By 1972, 15 percent of the rural population had been brought into villages and by 1976, 91 percent.

487 For a critique on Tanzania's 'villagization' schemes see J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Yale University Press, 1998), pp. 223-261.

488 See recent analyses, P. Bjerk, *Building a Peaceful Nation. Julius Nyerere and the Establishment of Sovereignty in Tanzania, 1960-1964* (Woodbridge, Boydell & Brewer, 2015), p. 374; M. Green, *The Development State. Aid, Culture and Civil Society in Tanzania* (Woodbridge, James Currey, 2014); P. Lal, *African Socialism in Postcolonial Tanzania. Between the Village and the World* (Cambridge, Cambridge University Press, 2015); L. Schneider, *Government of Development. Peasants and Politicians in Postcolonial Tanzania* (Bloomington, Indiana University Press, 2014).

Kenneth Kaunda, the President of Zambia (whose ideology was closer to Nyerere's) developed another eclectic version of African Socialism. He drew on African values and Christian ideals to shape, as he claimed, a "man-centered society" based on the principles of egalitarianism, mutual aid, attention to the weak and the poor, and communal effort.[489] These principles, which informed an idiosyncratic political/ideological framework, which Kaunda called "Humanism", would be found in rural areas and village life.[490] Kaunda's "Humanism" rejected colonialist, capitalist and Marxist ideologies altogether. It was conceived as a set of broad moral and economic guidelines that aimed to "reconcile traditional African values with the demands of a changing and modernizing economy"[491] and to inspire more disciplined urban behavior. As he stated, in a 1966-speech:

> I refuse to agree with those who say this was all very well for a unit as small as a village, before the advent of the powerful forces that exist in the Western type of colony. Surely it is not beyond the capacity of man to devise ways and means-especially in a place like Northern Rhodesia, where we have a big country with a comparatively small population-that would make it possible for us to accommodate the powerful forces in the Western type of economy, as well as preserve the man that is found in the small village unit who is not de-humanized, heart, soul, mind and body.[492]

Interpreting the values of village life, as he understood them, Kaunda aspired to combine developmentalism with a humanistic vision making "Humanism" the Government's official ideology in 1967. Unlike Nyerere in Tanzania, Kaunda did not idealize village life. Rather, he saw rural areas mainly as a moral geography that would align with African social and family values, recognize colonial injustices, and offer a constructive vision to those who had hitherto been ignored. By declaring that "Humanism" was "a decision in favor of rural areas,"[493] Kaunda expressed his government's wish to cater to the social and economic needs of rural

489 W. Tordoff, *Politics in Zambia* (Berkley, University of California Press, 1974), p. 370, 388-392.
490 "Humanism" was announced in 1967. See K. Kaunda, *Humanism in Zambia and a Guide to Its Implementation, Part I* (Lusaka, Government Printer, 1967)
491 A. Martin, *Minding Their Own Business: Zambia's Struggle Against Western Control* (London, Hutchinson, 1972), p. 111.
492 Cited in J. Ferguson, 'The Country and the City on the Copperbelt', *Cultural Anthropology*, 7, 1, Space, Identity, and the Politics of Difference (1992), p. 83.
493 Cited in W. Tordoff, *Politics in Zambia* (Berkley, University of California Press, 1974), p. 387.

societies, even in opposition to the demands posed by other organized groups of bureaucrats, miners, and European commercial farmers. The emphasis on rural areas and their integration into the nation and its economy was to act as a symbolic counter-weight to colonial/racial divisions. Kaunda conception of nation-building could be described as a territorial vision which aspired to eliminate racial and economic boundaries while reshaping the country's production patterns.

This vision for the reterritorialization of the country's economic and social geographies was also informed by the founding of a white settler state in (Southern) Rhodesia in 1965. Ian Smith and his radical white party issued a Unilateral Declaration of Independence (UDI) from Britain, thereby maintaining minority control over the African population for another decade. UDI made it difficult to access South African ports through the railway line across the Rhodesia-Zambia border, forcing Zambia to seek new import-export routes.[494] Sharing a border with a Rhodesia's white settler regime signaled the reconstitution of colonial racial divisions on a national scale and made Zambia's nation-building a symbolic defense of a postcolonial vision opposed to Africa's ongoing apartheid.

Although the Zambian Government's rural policies would prove rather half-hearted, as we will see below, Kaunda's rural-based nation-building visions were key in shaping priorities for the country's First National Development Plan, which was announced in 1966. In this light, Kaunda's priorities were also influenced by the recommendations of a 1965 economic mission to the country led by economist Dudley Seers, representing the United Nations Economic Commission in Africa (UNECA), one of the UN's regional commissions established in 1958. Seers' mission would be informed by critiques of development agendas that also tried to address the Zambian government's political priorities, considering development planning as a social and political task.

494 Zambia tried to established road access and eventually a new railway line through Tanzania to reach the port at Dar es Salaam. See W. Tordoff, 'Zambia: The Politics of Disengagement', *African Affairs*, 76, 302 (1977), pp. 60-69

5.2 South-to-South developmentalism

In 1965, Dudley Seers headed the *Economic Survey Mission on the Economic Development of Zambia*, assigned by UNECA.[495] From 1957 to 1961 he served on the Economic Commission for Latin America (ECLA), headed by Raúl Prebisch at a time when the Argentinian economist was developing his core–periphery model of underdevelopment, which subsequently led to dependency theory.[496] The common thread in these theories was seeing 'underdevelopment' not as a stage in a linear process (as the mainstream theories suggested), but rather as the outcome of imperial histories where industrialized countries (the core) developed at the expense of the non-industrialized (the periphery). These unequal 'development' patterns were perpetuated even after the end of colonialism through international trade relations. These critiques would compel economists to reformulate their economic models and ideas, which, according to Seers, had made them "unfitted to understand, let along solve, the problems of non-industrial societies."[497]

Zambia's economy was a showcase for dependency theory. The country's extensive copper resources were exploited by a mining industry which operated, as Seers stated, "in some respects [as] an enclave" that generated massive capital; but "most of this flows out of the country."[498] The limited funds that remained within the country in wages, taxes, and local exchange, formed the Government's primary revenue, thus making Zambia entirely dependent on fluctuations in the international copper market. As the rest of the economy remained underdeveloped, the country relied all the more on imports, leading to greater capital out-flow. This condition had its roots in the late-colonial period. A 1950 agreement with the United Kingdom had fixed copper royalties until 1986. In 1953, conditions got even

495 The request by the Government was made in September 1963. The mission started in November and finished in March 1964. See D. Seers, *Economic Survey Mission on the Economic Development of Zambia*, Report of the UN/ECA/FAO (Ndola, Falcon Pres, 1964).

496 Raúl Prebisch (1901-1986) was a prominent Argentinian economist who held positions in Argentine government and academia and was director of UN Economic Commission for Latin America (ECLA) and the UN Conference on Trade and Development (UNCTAD). See more: C. Kay, 'Raúl Prebisch', in D. Simon, (ed.) *Fifty Key Thinkers on Development*. (London: Routledge, 2006), pp. 199-205.

497 D. Seers, 'The limitations of the special case', *Bulletin of the Oxford University Institute of Economics & Statistics*, 25, 2, 1963, p. 84.

498 Seers compared Zambia's copper to oil: "[…] it is an astonishingly high proportion, almost unequal anywhere in the world, except for a few sheikdoms in the Middle East, the soil of which consists entirely of sand and petroleum" D. Seers, *Economic Survey Mission on the Economic Development of Zambia*, Report of the UN/ECA/FAO (Ndola, Falcon Pres, 1964), p. 8

more worse when the British government established the Central African Federation, which included Northern Rhodesia (Zambia), Southern Rhodesia, and Nyasaland. Zambia was not only losing copper profits abroad but tax revenue from mining — also managed by the Federal Government — was unevenly distributed. The country's socioeconomic development declined for a decade while social divisions became even deeper. The segregation of Africans and Europeans was evident in education, health, agriculture, settlements and even prisons.[499]

But despite these "deep structural defects which still mar the economy of Zambia" the mission expressed great optimism, expecting that the extensive political support enjoyed by the independent government "can be used to mobilize and canalize support for official measures, including those which are at first sight unpopular."[500] This postcolonial euphoria was basically premised on faith that the use of the copper as an "excellent foreign exchange earner" could support the country's 'structural' changes.[501] Seers proposed to remedy these inequalities by turning Zambia's economy from an export-oriented into an import-substitution economy. His report claimed that by diversifying its economy, Zambia would be less dependent on unequal international trade relations and that this would be a first step towards alleviating socioeconomic inequality in the country. Seers even anticipated that the Zambian government could "take over after Independence the mineral rights"[502] so as to use copper profits for "changing the economic structure and developing new [economic] sectors."[503] The State would take the lead in planning and promoting these structural changes, all in the name of the national interest.

Seers, like the dependency school,[504] criticized the universality of developmentalism, and became aligned with Third World aspirations to develop alternative trajectories, albeit within

499 *Ibid*, p. 11

500 *Ibid*, p. 12

501 The Mission worked on the assumption that "there will be no major recession in copper exports in the near future" by proposing measures to control the price and also to create a "cushion" to be used in case of market fluctuations. 13.

502 D. Seers, *Economic Survey Mission on the Economic Development of Zambia*, Report of the UN/ECA/FAO (Ndola, Falcon Pres, 1964), p. 40.

503 D. Seers, 'The use of a modified input-output system for an economic program in Zambia', *Institute of Development Studies at the University of Sussex*, 50, (1967), p. 2

504 For an elaboration on the economists associated with the so-called 'dependency school' see, G. Rist, *The History of Development: From Western Origins to Global Faith*. (Zed Books Ltd., 2014), 109. (Chapter 7: The Periphery and the Understanding of History)

a capitalist world economy. Much as Kaunda's vision was framed by a Zambian nationalism, rejecting colonialism and Marxism, Seers emphasized that his mission did not rely on "policies or planning methods from overseas, whether from Western Europe or the Communist countries," but instead addressed the "country's special economic structure."[505] This approach also expressed Seers' critique of western expertise. In his 1962 article "Why Visiting Economists Fail,"[506] he emphasized that a visiting economist not only needs to understand the economy of a foreign country but also to "acquire a 'feel' for local politics."[507] Rather than a consultant offering the same solutions to different countries, Seers saw the economists' role as addressing the host government's aspirations. Accordingly, his mission in Zambia translated the government's political aspirations into economic goals. He offered policy suggestions to increase employment levels, promote education and technical training, address the shortage of skilled and professional workers, and encourage agriculture and manufacturing to increase internal consumption and gradually increase exports. This would mitigate the country's excessive reliance on copper, raise living standards, and promote equality "between town and country, rich and poor, European and African."[508]

5.2.1 Input-output matrix

Besides responding to the government's priorities, an economist's task was to restructure the economy using planning tools. According to Seers, these needed to be "flexible" so that they "can be adapted to the type of economy and the data available."[509] This was the revised "input-output system" which had been introduced in the 1950s, signaling a shift from analyzing economies via mapping the "complex series of transactions in which actual goods and services are exchanged among real people."[510] This model analyzed the economy as flows of products taking place between producers (outputs) and consumers (inputs), where one

505 D. Seers, *Economic Survey Mission on the Economic Development of Zambia*, Report of the UN/ECA/FAO (Ndola, Falcon Pres, 1964), p. 13.

506 D. Seers, 'Why Visiting Economists Fail, Journal of Political Economy', *Journal of Political Economy*, 70, 4, (1962), pp. 325-338.

507 *Ibid*.

508 D. Seers, *Economic Survey Mission on the Economic Development of Zambia*, Report of the UN/ECA/FAO (Ndola, Falcon Pres, 1964), p. 13.

509 D. Seers, 'The use of a modified input-output system for an economic program in Zambia', *Institute of Development Studies at the University of Sussex*, 50, (1967), p. 2

510 The input-output model was based on the work of the economist Wassily Leontief. W. Leontief, 'Input-output economics', *Scientific American*, 185, 4 (1951), pp. 15-21.

producer or sector (e.g. agriculture) traded products with itself and other sectors of the economy (e.g. agriculture, manufacturing, trade etc.). These exchanges were represented through a matrix which could be expanded introducing further details depending on the data available.

The claim behind the input-output model was that desegregating broader economic activities into finer and finer segments allowed a closer look into the fabric of a country's economic structure.[511] Its flexibility, Seers seemed to claim, was important not only for grasping a more detailed image of Zambia's real economy but also for making projections while the economy was undergoing "structured change."[512] This model, Seers further asserted, allowed economists, and governments, to overcome the conventional dilemma over industrial versus agricultural development, since both were seen as connected via the input-output matrix. This matrix, operated by economists, would become a planning tool to help model different scenarios based on a series of linked assumptions:

> The rise in copper revenues would finance increased government services (such as education) and government construction; this would expand incomes, leading to higher consumption, which would in turn widen the market for manufactured consumer goods and for foodstuffs, providing a bigger demand for agricultural products; the rising flow of goods would require more transport and provide more work for those engaged in distribution and other services; the general economic boom would stimulate private construction in offices, houses, shops, and the like.[513]

The model was treated as "internally consistent" supposedly representing the total performance of the economy at a given time. The operation of this model, however, took no account of the real-life pace of these processes—the unintended consequences and unforeseeable events that could disrupt production and economic patterns. Contemplating the limitations of economic models, Seers not only favoured manual over computer

511 'The input-output table thus reveals the fabric of our economy, woven together by the flow of trade which ultimately links each branch and industry to all others. Such a table may of course be developed in as fine or as coarse detail as the available data permit and the purpose requires.' (Leontief)

512 D. Seers, 'The use of a modified input-output system for an economic program in Zambia', *Institute of Development Studies at the University of Sussex*, 50, (1967), p. 3

513 *Ibid.,* p. 13

calculations, but also urged younger economists to be cautious working "in a world so fanciful that 'planning' is reduced to a set of functions and real policy issues are bypassed."[514] Political priorities and long-term goals were important to direct planning away from simple data-gathering and a narrow economic understanding of reality. By interrogating the methods by which economic phenomena were measured and the adequacy of statistical techniques as the very foundation of developmental economics, Instead, he proposed setting "long-term targets for the reduction of poverty, unemployment and inequality" at both national and world scales, and advocated a global (power) balance among equally independent nation-states.[515]

But despite these critical assessments of developmentalism, which allowed economists such as Seers to take a stance closer to Third World aspirations, the links between capitalism and inequality at different scales remained unchallenged. Seers' input-output model offered an alternative architecture for the redistribution of resources and wealth within established unbalanced production patterns. Responsibility for mitigating the legacy of inequality was passed to the State, which expanded its control over the economy. The Zambian government gradually reclaimed a greater share of the copper profits and also promoted nationalization of large private enterprises so as to facilitate the "Zambianisation" of the economy. Investment was directed to already established sectors of the economy, while expanding manufacturing through a State-led effort. However, the redistribution of resources that was expected to take agriculture out of subsistence didn't take place. Consequently, the wage and income gap between urban and agricultural sectors increased further.[516] The rather cautious approach of Seers' mission towards the development of the rural areas reflected the Government's own ambivalence towards land tenure and resettlement policies, and, ultimately, towards the persistent late-colonial legacy.

5.3 The persistence of colonial agrarian legacies

514 *Ibid.*

515 See D. Seers, 'Meaning of Development'*, Institute of development studies library*, 44, (1970).

516 Urban wages increased by 40% between 1964 and 1968, while farmers' wages increased only 3%. See, D. Potts, 'Shall We Go Home? Increasing Urban Poverty in African Cities and Migration Processes, *The Geographical Journal*, 161, 3 (1995), pp. 245-264

Land reform was a central component of the post-war economic development agenda, precisely because of its broader economic, social, and political impact. In the 1950s, Middle East land reform was presented as a grass-roots democratization process which challenged landlords' power. Instead, it empowered the central state to provide land for the landless, or 'land-short', as a vehicle for political and social stability. Individual land rights, in some form, were also considered more amenable than communal ownership for mobilizing individual initiative as the basis for expanding cash-crop agriculture and capitalist production. Both the colonial and UN development agendas expressed a bias against 'traditional' and communal systems of tenure representing them as inefficient or as a cause of environmental degradation. The mission headed by Seers repeated these arguments:

> One of the main obstacles to development is the present tribal system of land tenure. In the past, under this system the individual had security of tenure and sufficient land for subsistence. The increasing population pressure on the land, the introduction of new technology and the development of a market economy are having a disintegrating effect on established customs and on traditional methods of agriculture, which have not yet been replaced by a new agricultural system with its own social institutions.[517]

The mission assumed a pre-capitalist/pre-colonial past, in which customary tenure systems provided social security and ecological balance. The establishment of a market economy along with other forms of pressure (including overpopulation and technological change) challenged 'traditional' forms of agriculture, which accordingly needed to modernize. At the same time, the need for a different approach was acknowledged, partly out of pragmatism and partly in response to the Government's stated goal not to cause "social disruption," and its resolve that "rural areas, should be built upon rather than destroyed."[518] As the existing land tenure system was not to be transformed or unified throughout the country, the mission accepted that "[i]n some places there is a need for a fundamental change in the system; in others only slight modifications are needed."[519]

517 D. Seers, *Economic Survey Mission on the Economic Development of Zambia*, Report of the UN/ECA/FAO (Ndola, Falcon Pres, 1964), p. 58
518 *Ibid*, p. 13.
519 *Ibid*, p. 63.

Let us briefly examine the colonial legacy before returning to Seers' land-tenure proposal. Like other African countries, Zambia fell under European control when the industrialization of European states **"**generated a massive growth of demand for agricultural and mineral raw materials, including a number of tropical products."[520] This demand produced different patterns of extraction of local resources, and commoditization of rural economies — shaping each country's position in the international division of labor. In West Africa, local peasants remained the main producers of exported cocoa, palm oil, cotton and groundnuts. However, in Zambia (formerly part of Rhodesia), as in Kenya and South Africa, after mining complexes were established the native population was dispossessed in favour of white settlement and large-scale farming. Zambia's native farmers received little encouragement to enter the monetary economy which consisted mostly of labour in mining. The mining monopolies had been controlled by European and American companies since the 1920s, and commercial agriculture, dominated by European farmer-settlers, was protected by the policies of colonial governments. The settlers were offered rights to Crown Land, a fertile area amounting to 6.3% of the country, which had been expropriated from the indigenous population.[521] Located also along the main railway line, which was built to transfer copper from North Zambia to South African ports, mining and commercial farming helped shape the distribution of the main urban centres along a north-south axis. All in all, the racial and geographical production patterns established during colonialism ignored 75% of the country's native population. Therefore, a wide gap in living standards, wage levels and economic productivity was created between commercial farming, the urban and mining sectors established along the railway line, and small-scale family farmers practicing subsistence farming, scattered within the so-called Native Reserves.[522]

520 H. Bernstein, 'Rural Land & Land Conflicts in Sub-Saharan Africa', In S. Moyo, and P. Yeros, eds., *Reclaiming the Land: The Resurgence of Rural Movements in Africa, Asia & Latin America* (London, Zed Books, 2005), p. 68

521 Both sectors amounted in the mid-1960s to 75% of the country's overall economic production. *First National Development Plan (FNDP) 1966-1970* (Republic of Zambia, Office of National Development and Planning, 1966), p.2. p.21.

522 Native reserves were established in 1928 and amounted to 36.0% of the total country.

This form of economic extraction characterising East and Central Africa was also reflected in how they were administered. The so called 'indirect rule'[523] was a central colonial system that coexisted and interacted with another, partly autonomous, administrative system codified—and often invented—as 'customary laws' and 'tribal' structures. Local chiefs were assigned to govern the vast countryside, and individuals who belonged to a chief's following were granted land use rights. These institutions were also bound up with gender divisions of labour, as men mostly worked in the mines and commercial farms, circulating between various "combinations of 'hoe and wage,'"[524] whereas women were more confined to the rural areas "under despotic chieftaincies."[525] According to ethnographic studies chiefs considered towns and urban centres as disorganised and immoral in contrast to rural areas' authentic and honourable way of life.[526] On such assumptions, local authorities were further empowered during colonialism "to prevent, limit or otherwise manage dynamics of class formation" expected to arise from the expansion of commodity production.[527]

In the interwar period, social, economic and environmental reforms were proposed in response to the mobilisation of worker and peasant movements and other forms of opposition to the colonial project. These reforms were prompted by broader metropolitan concerns about "how to protect the natives from the costs of capitalism while gradually allowing them to share in its benefits."[528] But in Zambia, as in other settler colonies, European farmers were protected from competition with their African counterparts through price controls and other measures.[529] The socio-economic and political reforms initiated in the

523 In Zambia it was introduced in 1924, See M. Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (Princeton, Princeton University Press, 1996) and also S. Berry, 'Hegemony on a Shoestring: Indirect Rule and Access to Agricultural Land', *Journal of the International African Institute*, 62, 3, (1992), pp. 327-355.

524 H. Bernstein, 'Rural Land & Land Conflicts in Sub-Saharan Africa', In S. Moyo, and P. Yeros, eds., *Reclaiming the Land: The Resurgence of Rural Movements in Africa, Asia & Latin America* (London, Zed Books, 2005), p. 75.

525 S. Moyo, and P. Yeros, eds., *Reclaiming the Land: The Resurgence of Rural Movements in Africa, Asia & Latin America* (London, Zed Books, 2005), p.34.

526 See J. Ferguson, 'The Country and the City on the Copperbelt', *Cultural Anthropology*, 7, 1, Space, Identity, and the Politics of Difference (1992), pp. 80-92

527 H. Bernstein, 'Rural Land & Land Conflicts in Sub-Saharan Africa', In S. Moyo, and P. Yeros, eds., *Reclaiming the Land: The Resurgence of Rural Movements in Africa, Asia & Latin America* (London, Zed Books, 2005)

528 This approach was termed 'Fabian colonialism' See, M. Cowen and R. Shenton, 'The Origin and Course of Fabian Colonialism in Africa', *Journal of Historical Sociology* 4, 2, (1991) pp. 143-147.

529 Colonial trading bodies regulated the prizes so that European maize was bought in higher price than African-produced maize.

inter-war period intensified in the post-war years informed by European welfare developmental policies and Keynesian logic that suggested increasing investment to induce development.[530] However reform never became extensive, for fear of disrupting the existing patterns of resource and labour extraction. The uneven and ambiguous state-led provision of social and public infrastructure was complicated by attempts to contain rising nationalist movements and keep the colonial interest intact even after independence.

In keeping with these economic and political priorities, colonial states adopted a more interventionist approach to land reform and agriculture. They also attempted to challenge 'customary' tenure systems in their attempt to promote the socioeconomic modernisation of the peasantry. In this context, Zambia's colonial government opened blocks of land to native populations (the so called "Trust land") so as to relieve social and political pressures — and what where considered environmental problems — in overpopulated areas. Rather than replacing existing forms of land tenure, late-colonial governments tried to circumvent them, just as Seers' mission hoped to do. However, aspiring to show the potential of agricultural modernisation, colonial governments established model and pilot farming schemes and resettlement projects, whose indigenous users would be portrayed as pioneers and "exemplars of cultural modernity, and as a force for civic responsibility and social stability following independence."[531] Informed by scientific discourse, these projects also introduced the question of ecological impact along with socio-political concerns about promoting development without generating tension and conflict.[532] Such ambivalence, emerging from conflicting pressures and interests, lay at the core of colonialism in Africa, where European states, "less concerned with legitimizing their own presence,"[533] eventually generated complex institutions and discourses, besides unbalanced economic patterns. These were among the many legacies the new nation-states were saddled with.

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530 See S. Berry, *No condition is permanent: The social dynamics of agrarian change in sub-Saharan Africa* (Wisconsin, University of Wisconsin Press, 1993), pp. 47-48.

531 H. Bernstein, 'Rural Land & Land Conflicts in Sub-Saharan Africa', In S. Moyo, and P. Yeros, eds., *Reclaiming the Land: The Resurgence of Rural Movements in Africa, Asia & Latin America* (London, Zed Books, 2005), p. 74

532 See A. Bowman, 'Ecology to Technocracy: Scientists, Surveys and Power in the Agricultural Development of Late-Colonial Zambia', *Journal of Southern African Studies*, 37, 1, (2011), pp.135-153; J. Hodge, *Triumph of the expert: agrarian doctrines of development and the legacies of British colonialism* (Ohio, Ohio University Press, 2007); H. Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago, University of Chicago Press, 2011).

533 A. Mbembe, 'Necropolitics', *Public Culture*, 15, 1, (2003), pp. 11-40.

After the end of colonialism, countries such as Kenya and Nigeria retained colonial structures, the role of chiefs, and customary laws in order to administer rural areas, whereas countries like Tanzania and Mozambique, completely replaced them, promoting administrative decentralisation and state control over the land.[534] Zambia was somewhere in the middle, attempting to weaken the power of chiefs by establishing elected bodies in each district to act as intermediaries between local society and new provincial and district administrations.[535] While access to land (except "Crown Land") still depended on customary laws, the government aimed to take control over development planning and experimented with different modes of decentralisation. The UNECA mission accepted that changing the land tenure system, which was the basis of subsistence agriculture, was not a priority at the time. Instead it acceded to the government's new administrative structures, claiming that:

> These changes will unify tribal territories and facilitate the implementation of agricultural and social reforms on a regional basis […] They should therefore become the country's most effective organ for progress in all aspects of local affairs […][536]

Among other suggestions to the government, the mission proposed to give access to the more fertile areas along the railway line by lifting economic restrictions on Crown Land especially for "African farmers who show promise as commercial producers […] but with close supervisory and extension assistance."[537]

In the end, Seers' mission reiterated many of the ideas of late-colonialism and inherited its ambivalence over how far reform and intervention in rural development could and *should* go. Rather than proposing extensive transformation, the mission suggested reorganizing, modifying and improving existing patterns of production through "expanded extension

534 See also M. Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (Princeton, Princeton University Press, 1996)

535 Zambia introduced elected Rural Councils before Independence and held elections in 1966 when Provincial and District Development Committees were also established.

536 D. Seers, *Economic Survey Mission on the Economic Development of Zambia*, Report of the UN/ECA/FAO (Ndola, Falcon Pres, 1964),

537 The report stated that Crown Land was "not available to Africans, since they (like anyone else) are required to have assets valued at 3.000 as a minimum to be eligible to receive grant and the right to farm it […] We recommend that access to Crown Land should no longer be conditional upon the present financial requirement" *Ibid*, p. 64.

services, fertilizer use, more intensive systems and special crop programs, a phased advance in mechanization and cattle development. […] modern techniques in all branches of farming […] the widespread provision of credit, improved marketing facilities […]."[538] The mission was suspicious of locally based production forms, such as shifting cultivation, the fragmentation of holdings, and the communal management of grazing lands and cattle. It considered the latter to be 'time-wasting', the root of both land degradation, and (potentially) of social tensions. Instead, they placed their faith in resettlement schemes, where more appropriate forms of production could be introduced. Following the logic of post-war developmentalism, the mission expected these schemes to become 'showcases' for more efficient forms of agricultural production and new forms of tenure, in which social and market infrastructure could help regulate and diffuse the potential of cash crop agriculture and entrepreneurial culture throughout rural areas.

5.4 Hierarchical networks in rural Zambia

Zambia's First National Development Plan, which was announced in 1966 (FNDP) (1966-70), merged all these aspirations: both Kaunda's rural-based nation-building vision and Seers' restructuring economic agenda, which retained both the land tenure and colonial agrarian legacies. Introducing the plan, Kaunda explicitly stated that it aimed to provide "prosperity and higher standards of living for every Zambian citizen" by assigning a greater emphasis to "the rural areas than ever before, as these are parts of the country which have for too long, been neglected." [539] The Plan's primary goal was to overthrow the country's "dual economy," the bulk of which was still in the hands of "a small privileged minority" of Europeans.[540] Expressing Seer's economic agenda, the Plan was also expected to facilitate "shifting from the present dependence of copper to a diversified economy [which] puts agriculture along with manufacturing on top of other sectors of economic activity […] The rural areas can contribute to this by increasing non-copper exports and substituting agricultural imports by local

538 *Ibid*, p. 57.

539. K. D. Kaunda, 'Introduction', in, *First National Development Plan (FNDP) 1966-1970* (Republic of Zambia, Office of National Development and Planning, 1966).

540 *First National Development Plan (FNDP) 1966-1970* (Republic of Zambia, Office of National Development and Planning, 1966), p.2.

production."[541] Despite the plan's stated goals, the government's early nation-wide measures, which promoted co-operative farming[542] and tractor mechanisation schemes,[543] failed to mobilise the "mass of the rural population."[544]

Responding to these early disappointments, the Government anticipated a more effective management of state funding and human resources by promoting population redistribution schemes wherever the land was thought under- or overpopulated. Such schemes addressed the serious lack of economic and social infrastructure, and stimulated agricultural productivity through co-operative and family-scale farming. Aiming also to advance "radical changes in the social organisation of scattered rural populations," they were important in contributing to one of the FNDP's key goals: the rural people's "psychological re-orientation towards a monetary economy."[545] These schemes accompanied the establishment of new provincial and local administrative structures, such as elected rural councils and development committees, aimed at weakening the long-established customary authorities and further legitimising the State as the sole agent behind modernisation, development planning and national unity.[546] In this respect, rural development was proclaimed as part of a larger decentralisation policy that aspired to strengthen the State's grip on a diverse countryside[547] promoting development benefits and nation-building, as exemplified by the motto 'One Nation, One Zambia.'

When Doxiadis Associates were commissioned to plan sixteen rural settlements (in 1967), the firm had already been preparing the master plan for the industrial development of Kafue

541 *First National Development Plan (FNDP) 1966-1970* (Republic of Zambia, Office of National Development and Planning, 1966), p.50.

542 The co-operative policy was announced in 1965 by Kaunda in the so called 'Chifubu declaration' See W. Tordoff, *Politics in Zambia* (Berkeley, University of California Press, 1974), p. 21.

543 See S.A. Quick, 'Bureaucracy and Rural Socialism in Zambia', *The Journal of Modern African Studies*, 15, 3 (1977) and A. Bowman, 'Mass Production or Production by the Masses? Tractors, Cooperatives, and the Politics of Rural Development in Post-independence Zambia', *The Journal of African History*, 52, 2 (2011), pp. 201-221.

544 *First National Development Plan (FNDP) 1966-1970* (Republic of Zambia, Office of National Development and Planning, 1966), p.21.

545 *Ibid.*

546 Zambia introduced Rural Councils and Provincial and District Development Committees Provincial in 1966, Village and Ward Productivity Committees in 1971. S. Berry, *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa* (Madison, Wis, University of Wisconsin Press, 1993), p.59.

547 Zambia consisted of approximately 73 'tribes' grouped in 7 major ones. See A. Martin, *Minding Their Own Business: Zambia's Struggle Against Western Control* (London, Hutchinson, 1972), p. 45.

(40km south of the capital city, Lusaka) for almost a year.[548] Kafue's industrial project manifested Seers' prescriptions to diversify the economy away from copper, and the government's readiness to support industrial projects together with agriculture. The project's construction was fast-tracked and DA's local office remained preoccupied with its implementation. Nevertheless, "Studies for the Development of Rural Settlements in Zambia," which was assigned by the Ministry of Local Government and Housing,[549] was seen as a great opportunity to expand the firm's planning activities in the country and to firmly establish another node in its transnational office network.[550] **(Fig.5.1)** Moreover, the firm's involvement in Zambia's rural development promised to shape close connections with the country's very own President who had made the socioeconomic development of rural areas a top priority. Doxiadis was sceptical about the Government's intention to start a settlement policy without first investigating "optimum sizes." He believed this to be a complex task of considering population sizes, agricultural productivity levels, and time-distances.[551] Despite his initial hesitations, he did not hesitate to offer the President his own spatial vision, suggesting the need for a broader strategy that required "implementing a correct conception of the Ekistic model to the country."[552]

By casting the rural scheme's project within wider development visions at a national scale, Doxiadis went beyond the Government's more moderate goals. While the project aimed to expand eight existing rural settlements and create another eight new ones, the firm aspired to shape "regional organic cohesion" in the rural areas through a "structural network of linkages with a full range and hierarchy of functions that will exploit and enhance their

548 The firm had been in contact with Zambia's government over a year through various channels: Doxiadis contacted Waldemar A. Nielsen at the African American Institute, U.S. State Department, and also the American ambassador in Zambia Robert C. Good. He also wrote directly to Zambia's President in June 1965. Other associates also wrote to Zambian Ministers or other Government officials. The master plan for Kafue was assigned, right after D. Soteriou visited the country, in November 1966, by the Industrial Development Corporation of Zambia Limited, a parastatal body established to promote industrialization. The first associates to arrive in Zambia were Ch. Andritsos, civil engineer, M.Dorees and G.Kalombaris, architects. Archive files 24659, Doxiadis Archives.

549 The project was commissioned by the Commissioner of Town and Country Planning P. M. Muyangwa, under the auspices of the Minister of Local Government and Housing, Sikota Wina.

550 Besides working in Pakistan, USA, Spain, France and Brazil, DA had established local offices in Ghana, Ethiopia, Libya and Sudan.

551 C. Doxiadis, 'Notes on Zambia's Townships', 12 October 1967, Archive files 24658, Doxiadis Archives [In Greek].

552 C. Doxiadis, 'Conception of Settlement Patterns', 2 April 1968, Archive files 24666, Doxiadis Archives [In Greek].

productivity and social activities."[553] Through the establishment of a hierarchical network of interconnected rural settlements, DA aimed to achieve more balanced productions patterns between rural, urban, and mining areas. At the same time, with the distribution of the rural population in permanent settlements, the firm also aimed to set the rural people of Zambia on a course of "universal" evolution, following Ekistics' and Ecumenopolis' premise that human societies "naturally" pass from the "nomadic food-gathering life […] into the era of agriculture" and from lower to higher population densities, until they reach the "urban" stage.[554]

This evolutionary approach echoed once more Walter Christaller's Central Place Theory of 1933. DA's proposal for Zambia emphasized:

> Experience has shown that in rural areas with more or less homogenous terrain where people walk to their fields, the agricultural areas of each settlement will tend to close upon each other, compressing their sides roughly in a hexagonal pattern.[555] **(Fig.5.2)**

The theory claimed that, as this process evolves, market and other services position themselves in central locations so as to offer services to the largest possible number of people/clients in the surrounding area. Following the same spatio-economic rule, each central place eventually serves an equal area, while more specialised services gradually emerge, creating central places of higher levels, having a wider population/area influence. In the assumed uniformity of the agricultural landscape the process comes close to its ideal form: a hierarchical network of interconnected central places. Translated into a theoretical model and a geometrical/mathematical scale, the whole process could then be used, in reverse, to 'optimise' and develop the number of centres, their hierarchy and their distribution across an evenly divided territory and population. **(Fig.5.3)**

553 'The Development of Rural Townships: A Programme for the Creation and Development of Rural Centres in the Country', October 1968, Archive files 24663, Doxiadis Archives, p.6.
554 C. Doxiadis, et al., 'Techniques of Studying Density', *Ekistics*, 20, 119, (1965), pp. 199–207.
555 'The Development of Rural Townships: A Programme for the Creation and Development of Rural Centres in the Country', October 1968, Archive files 24663, Doxiadis Archives, p.6.

Doxiadis incorporated Christaller's idea of a hierarchical classification of rural centres following Ekistics Logarithmic Scale (ELS), proposing the standardisation of Zambia's rural settlements — in terms of size and pattern — into three levels.[556] The smallest unit, named a "village", would become the centre of a region of approximately 1000 people. The middle-sized unit, the "rural township" would serve a total of 8000 people, 2000 of whom would live in the centre and the rest in six surrounding villages. The largest settlement, named a "market town", would offer services to approximately 50,000 people, 3000 of whom would live in the centre; the rest would be distributed in the six rural townships and 36 surrounding villages.

In support of this proposal, Doxiadis compared the first two levels of settlement with *kefalochori*[557] (head village) and *komopolis* (head town). Both terms had origins in Ottoman rural Greece which in the 19th and 20th century continued to signify the larger and more important villages and the medium size centres of the countryside. The 'market town', on the other hand, made a direct reference to colonial traditions and the construction of marketing services for farming areas, which Doxiadis claimed to have seen in Zambia.[558] The naming was important insofar as it communicated the settlements' scale and size, thereby stressing the principle of hierarchy and the role of each settlement in shaping a wider network.

DA's spatial vision for Zambia conflated the various rural planning traditions which have been studied in this thesis. Firstly, there was an emphasis inspired by Christaller on the 'optimisation' of settlement size and their distribution according to economic and geographic principles. Secondly, there was Doxiadis' confidence in large-scale rural resettlement projects derived from his extensive first-hand knowledge of rural planning in the midst of two profound socio-political crises in 20th century Greece: the legacies of rural settlements in 1920s Northern Greece,[559] and his own wide-ranging effort for the post-war reconstruction

556 'The Development of Rural Townships: A Programme for the Creation and Development of Rural Centres in the Country', October 1968, Archive files 24663, Doxiadis Archives, p.8.

557 Initially 'kefalochoria' were those villages which during the Ottoman times had the rights to cultivate their own land and pay taxes through collecting agents, rather than being employed by land owners in *chiftlik* estates. For this reason, the kefalochoria were also called 'free villages' or in Greek *eleftheriaka*. See A. N. Karakasidou, *Fields of Wheat, Hills of Blood: Passages to Nationhood in Greek Macedonia, 1870-1990* (Chicago & London, University of Chicago Press, 2009), p.47.

558 C. Doxiadis, 'Conception of Settlement Patterns', 2 April 1968, Archive files 24666, Doxiadis Archives [In Greek].

559 See E. Kontogiorgi, *Population Exchange in Greek Macedonia: the Rural Settlement of Refugees, 1922-1930* (New York, Oxford University Press, 2006) and Chapter 1 and 2.

of Greece's countryside.[560] These cases led Doxiadis to legitimise rural resettlement not only as an ethical imperative — providing relief to refugees and displaced people — but mostly as a State-driven enterprise to upgrade socioeconomic structures, promote national unity, and accelerate development within a capitalist economy. Combining these various planning cultures with DA's various projects in the Middle East and Asia, the firm became especially attuned in contemplating the social, cultural and political complexities of non-European contexts and the priorities of decolonisation processes.[561]

These complex genealogies of DA's rural planning expose the similarities between the spatial vision offered to Zambia and those proposed by Doxiadis for post-war Greece and other non-industrialised countries. Shaped through various planning projects in the South DA's proposal for Zambia introduced another developmental vision along with those proposed by Seers and Kaunda. All three seemed to avoid approaching development as a western model to be applied directly to the country. Rather they envisioned transformative processes, ostensibly based on Zambia's own resources/capacities and tied to both a goal of economic growth and to national autonomy. Kaunda proposed a human-centred modernisation emerging from Zambia's own rural traditions and moral values within a broader vision of African independence. Seers envisioned a restructuring of the country's economy away from a dependency on copper monopolies and on imports, aspiring to achieve economic self-reliance through agricultural development and manufacturing. Finally, Doxiadis Associates proposed changing the country's spatial patterns so as to bring the rural population within social, economic and administrative decentralised networks. All three expanded the State's role and its capacity to manage the economy and the population.

Doxiadis' plans expressed in spatial/territorial terms Kaunda's rural-based modernisation and Seers' economic agendas, which expected model settlements to diffuse cash crop farming to

560 Doxiadis was appointed director-general of the Ministry of Housing and Reconstruction (1945-1948) and undersecretary of the Ministry of Coordination (1948-1950) in charge of the Marshall plan. See J. G. Papaioannou, 'C.A. Doxiadis' Early Career and the Birth of Ekistics', *Ekistics*, 41, 247, (1976), pp. 313–319 and A. Kakridis, 'Rebuilding the Future: CA Doxiadis and the Greek Reconstruction Effort (1945-1950)', *The Historical Review/La Revue Historique*, 10 (2013), pp. 135-160.

561 DA's planning approach in Zambia shows noticeable similarities with the work of Ecochard in Morocco's countryside in the 1950s. I would like to thank the anonymous reviewer for bringing this connection to my attention. See M. Ecochard, 'Les Quartiers Industriels Des Villes Du Maroc', *Urbanisme,* 11-12 (1951), pp. 26-39.

the countryside. DA's ambitious plans predicted the full development of Zambia's rural network around the year 2000, conveying the firm's faith in its technocratic methodologies. DA's spatial vision, depicted also as an image of a future modernised Zambia, was endorsed by the country's very own President who praised Doxiadis in public interviews, stating "He is planning some of our village re-grouping now and if we learn from him, we should go a long way to meet the demands of Humanism on our society."[562]

5.4.1 Alternative visions of rural transformations

The spatial visions of future rural networks expressed in DA's large-scale, top-down approach and rational/scientific planning were largely based on the assumption of a homogenous Zambian countryside. However, rural zones were not so homogenous. Instead, there were vast areas where customary laws still applied, shaping unique and complex social structures and land uses. DA employed 'ethnographic' methodologies during extensive surveys in rural Zambia wishing to capture the complexities of rural life and their local varieties, however, several aspects remained obscured at a certain level leading to various assumptions and generalisations.

A 1967 study titled "Social aspects of village regrouping in Zambia", prepared by geographer George Kay,[563] challenged some of the Greek planners' assumptions for rural Zambia. Kay performed a field survey between mid-July and mid-September 1966 and delivered his study around the time DA's team from Athens performed a two-month survey of rural Zambia, in the summer of 1967.[564] Although Kay's study may have been known to the Greek firm when they submitted their preliminary report in December 1967,[565] and even though both had

562 Kaunda even repeated Doxiadis' evolutionary thinking: 'He gave me some very interesting sketches which showed the stages through which man has developed up to the time he builds a big town. […] the idea is that from his rural stage man develops naturally to other stages, to bigger units, villages and so on…' This interview was reproduced in DA's publication. See "President Kaunda Interviewed', *DA Review*, 4, 40 (April 1968), pp. 15-16.

563 Kay was at the time a professor of Geography at the University of Hull.

564 The DA team reported that it had visited '41 towns and villages during 52 days of travel [...] covered 4.900 miles by car, mainly Land Rover, and 2,450 miles by plane.' DA team included: C. Kamaras, civil-engineer, A. Plytas-Timber, Economist, G. Kalombaris, architect-planner. They were later joined by architect-town planner M. Dorees. The whole project was under the direct supervision of A. Efesios, the Head of the Regional and Town Planning Branch of the office in Athens. See 'Rural Townships of Zambia – General Report', 15 December 1967, Archive files 24657, Doxiadis Archives.

565 Both studies were commissioned by the Commissioner of Town and Country Planning P. M. Muyangwa, under the auspices of the Minister of Local Government and Housing, Sikota Wina.

utilised similar quantitative and qualitative tools (i.e. statistical analysis, field surveys, mapping, interviews, ethnographic data), they arrived at different understandings of the rural landscape. Kay drew on his extensive research knowledge of the country,[566] as well as the work of anthropologists at the Rhodes-Livingstone Institute for Sociological Research in Lusaka.[567] By adopting a sociological and ecological perspective Kay's study offered insights into the challenges of village regrouping schemes and even anticipated some of the critical points Scott made about villagisation policies in Zambia's neighbouring Tanzania.[568] Without completely dismissing the economic and political goals behind regrouping policies, Kay attempted to formulate a counter-proposal for rural regrouping which took into consideration existing rural production and life patterns.

Like DA, Kay's study did not question the legitimacy of the Government's authority to promote rural development. The goal for both was, as Kay put it, to "evaluate the feasibility of creating larger and more permanent groupings of population" as these were considered necessary to 'facilitate the provision to rural populations of social benefits available to urban communities.'[569] However, Kay's study highlighted a rather paradoxical situation. Central governments' preference for larger settlements were in disagreement with "tendencies inherent in rural society towards dispersion and the creation of small settlements."[570] Contrary to DA's belief in human societies' 'universal' tendency to form and live in larger concentrations, Kay's study argued for rural Zambia's opposite tendency: smaller,

566 George Kay's research experience in Zambia began in the late 1950s. See for example, G. Kay, 'Agricultural Change in the Luitikila Basin Development Area, Mpika District, Northern Rhodesia', *Rhodes-Livingstone Journal,* 31, (1962), pp.21-50 and G. Kay, 'Resettlement and Land Use Planning in Zambia: The Chipangali scheme'. *The Scottish Geographical Magazine*, 81, 3, (1965), pp.163-177.

567 For an analysis of colonial anthropological studies in rural Zambia see for example, J. Donge, 'Understanding Rural Zambia Today: The Relevance of the Rhodes-Livingstone Institute', *Africa: Journal of the International African Institute*, 55, 1, (1985), p.60, and L. Schumaker, *Africanizing Anthropology* (Durham, NC, Duke University Press, 2001).

568 J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Yale University Press, 1998), pp. 223-248; See also more recent studies: P. Bjerk, *Building a Peaceful Nation. Julius Nyerere and the Establishment of Sovereignty in Tanzania, 1960-1964* (Woodbridge, Boydell & Brewer, 2015), p. 374; M. Green, *The Development State. Aid, Culture and Civil Society in Tanzania* (Woodbridge, James Currey, 2014); P. Lal, *African Socialism in Postcolonial Tanzania. Between the Village and the World* (Cambridge, Cambridge University Press, 2015); L. Schneider, *Government of Development. Peasants and Politicians in Postcolonial Tanzania* (Bloomington, Indiana University Press, 2014).

569 G. Kay, *Social Aspects of Village Regrouping in Zambia* (Institute for Social Research, University of Zambia, 1967), p.5.

570 *Ibid*, p.63.

fragmentary and autonomous settlements. Small independent settlements were more viable (and also more desirable to the population, Kay insisted), because "small family groups are seeking independence from larger communities."[571] He further underlined that smaller settlements supported rural production modes that kept population size, natural resources and land use in balance. In this light, he criticised previous colonial experiments that promoted larger settlements for reasons of administrative convenience (i.e. tax collection, population control), and warned that overpopulation eventually led to depletion of resources, soil erosion, social tensions, disruptive land use changes, and would eventually entail more State control and conservation measures. Whereas DA saw the need for a complete restructuring of Zambia's countryside as a way to overcome the urban-rural divide and create regional cohesion, Kay emphasised the need to maintain customary laws and the established social/ecological resilience of rural areas.

Kay's study also highlighted the tribal and linguistic diversity of rural Zambia, questioning the homogenous but also 'western' understanding of rural settlements. The notion of the "village", the study underlined, "has so many connotations in Zambia, none of which is equivalent to any currently in use in western terminology, that further use of the word should be discouraged."[572] The elusive character of the "village", the study implied, was not simply a problem of terminology, but also had conceptual and architectural dimensions. Kay's study claimed that the "high degree of mobility or fluidity [which] is characteristic of all parts of rural Zambia" meant that rural settlements were not to be seen as something permanent.[573] Criticising "western" (or simply uninformed) perceptions, he stressed how the Zambian village is best seen as "an institution through which a large and varied company of people pass at different speeds; very few people spend their life in a single village."[574] The study further highlighted the dispersed architectural character of rural settlements, which accommodated different uses, and warned against modernist planning efforts that tried to fit such living conditions "into limited spaces and confined quarters' and 'separate residential and workplaces."[575]

571 *Ibid*, p.57.
572 *Ibid*, p.44.
573 *Ibid*, p.56.
574 *Ibid*
575 *Ibid*, p.64.

DA's surveys, perhaps adopting some of Kay's insights, also confirmed the elusive character of villages and the 'fluidity' of rural settlements as a result of the "constant movements over the land in response to ecological demands as well as flooding or kinship pressures."[576] At the same time, they claimed that strong social, economic, and cultural ties between the population and the land made the village the "basic territorial unit of [the] political and social structure."[577] In an effort to counter the argument of fragmentation and emphasise more permanent social relations, DA even traced larger clusters and "systems of villages."[578] But even though DA's study emphasised the complex interconnections between population, settlements and land uses, it still conceptualised the rural people simply as inherently mobile, and settlement patterns as constantly shifting. On this understanding, DA presented a uniform rural landscape which lacked "regional organic cohesion" and where rural settlements appeared "[as] independent molecules in an undefined space."[579]

The elusive, fluid and fragmentary character of rural Zambia, eventually generated opposite responses: DA saw rural settlements' 'fluidity' in negative terms suggesting that the existing social structures must be expressed through permanent rural settlements. Kay, on the other hand, saw existing rural patterns as a viable socio-ecological model shaped in response to the country's regional and local conditions. Stressing that "physical and social permanence are quite separate matters,"[580] Kay's study warned against resettlement policies and suggested that the decision to resettle be left to the people themselves. If the goal of the regrouping policy was to bring people closer, Kay ultimately stressed "there is no need to interfere with village form,"[581] and prompted the Government, and the planners, to embrace alternative strategies to transform rural societies.

576 According to DA rural settlements were not permanent as a result of constant rebuilding of traditional huts in every 5 or 6 years, but also because entire hamlets or clusters of hamlets '[were] not likely to stay in the same place from more than 10 to 12 years'. See 'Rural Townships of Zambia – General Report', 15 December 1967, Archive files 24657, Doxiadis Archives, p.24.

577 *Ibid*, p.16.

578 *Ibid*, p.24.

579 'The Development of Rural Townships: A Programme for the Creation and Development of Rural Centres in the Country', October 1968, Archive files 24663, Doxiadis Archives, p.6.

580 G. Kay, *Social Aspects of Village Regrouping in Zambia* (Institute for Social Research, University of Zambia, 1967), p.63.

581 *Ibid*, p.67.

5.4.2 Imagining self-sustained rural communities

DA's conceptualisation of rural life as lacking coherency and organisation, overlooked social and ecological considerations, expressed by Kay's study. Preoccupied, as it was with large-scale planning and its pronounced strategy to "examine the existing situation as a whole, in order to derive the general characteristics of these rural areas […] and, to propose standards that could be adopted in general,"[582] the firm placed local variations and particularities aside. The conflicting conceptualizations of rural life by Kay and DA were driven by different sociopolitical visions, both of which were available at the time in the country, informing contested views regarding the scale and form planning interventions should take in rural areas.

Contrary to the British geographer, the Greek planners saw the conditions shaping rural life not as an expression of freedom—or in Kay's terms as a free will for customary living—but as a manifestation of human's struggle "against nature in order to survive and progress."[583] Consequently, while Kay was focusing on the risks of interfering with existing social-ecological patterns, DA was contemplating the precariousness and risks of peasant life based mostly on subsistence agriculture. These risks, DA seemed to imply, were becoming sharper as internal migration drained skilled labour from rural areas affecting productivity in what were time- and labour-intensive cultivation methods. These included crop rotation, the simultaneous cultivation of different fields, and widespread dependence on *citemene*. The latter was a method of preparing fields, by tree cutting and burning, which required waiting several years for trees to regenerate before the cultivation cycle could be repeated at the same location.

Kay's views were shaped in the late colonial climate when colonial officials' and scientists' priorities aligned against interventionist approaches. In line with a liberal, conservative attitude, Kay rejected resettlement policies. Instead, he favoured a gradual transformation of existing sociospatial patterns. The Greek firm, and Zambian official policy, on the other hand, were critical of such views which eventually tended to disconnect the rural population from urban centres and commercial networks. Visualising large-scale rural networks was thus seen

582 'Rural Townships of Zambia – General Report', 15 December 1967, Archive files 24657, Doxiadis Archives, p.2

583 *Ibid*, p.79.

by the firm as a way to accelerate rural areas' development so as to 'catch up' with the pace of urbanisation. Trying to achieve more balanced relations between urban and rural life, the Greek firm ultimately proposed a radical social and cultural transformation of the rural population through the design of modern settlements.

Aiming to improve living conditions, as well as provide social amenities and market infrastructure, DA's rural settlements were thus seen as a way to emancipate rural societies and introduce them, as active participants/agents, into networks of commercial agriculture and the urban way of life.[584] DA's ultimate goal was to create "a sense of cohesion and urbanity" as a precondition for nurturing "social interaction and progress within the rural settlement."[585] Exposing DA's spatial/architectural predispositions, this approach demanded planning conform to an aesthetics of order and standardisation,[586] where spatial proximity and social interaction were perceived as necessary preconditions for advancing the cultural transition of "stateless societies"[587] to self-sustained communities.

On these assumptions, DA introduced a model plan: a rectilinear settlement with a north-south orientation, organised into three zones. The residential zone was laid out in two neighbourhoods divided by a central area of public facilities, and there was a third zone of manufacturing and storage placed along a service road which separated internal and regional traffic.[588] Although the model plans were expected to adapt to the topographical features and development conditions of each location and the surrounding region, their main features remained the same: tending to promote the standardisation and reformulation of local sociospatial patterns. Their compact design logic relied on three key considerations. First, the settlements required a direct connection to a regional road network to support the utilisation

584 See the pertinent analysis by M. I. Muzaffar, 'Boundary Games: Ecochard, Doxiadis, and the Refugee Housing Projects Under Military Rule in Pakistan, 1953–1959', In Aggregate, *Governing by Design: Architecture, Economy, and Politics in the Twentieth Century* (Pittsburgh: University of Pittsburgh Press, 2012), p. 435.

585 See 'Rural Townships of Zambia – General Report', 15 December 1967, Archive files 24657, Doxiadis Archives, p.79.

586 For a critique of the standardization of rural schemes see J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven, Yale University Press, 1998), p.253.

587 'Rural Townships of Zambia – General Report', 15 December 1967, Archive files 24657, Doxiadis Archives, p.18

588 DA's designs for Zambia's may well have been informed by the compact settlements in Ecochard's proposals for Morocco in the 1950s. Contrary to Ecochard's small industrial settlements DA's rural settlements were adapted to the existing family- and small-scale farming of Zambia.

of trade and market infrastructure. Second, family-farming patterns had to be sustained by providing typical plots/houses for single, five-member families—although this was not typically the case in all of rural Zambia. According to DA's reports, each family was expected to have a "small private garden, one or two domestic animals (even if these do not yet exist), and space for a cart or eventually a tractor."[589] Finally, the plans included an extensive mixed-programme zone, containing educational and health services, as well as commercial, recreational, religious and administrative uses. Larger plots around the settlement were reserved for vegetable gardens, cattle farms, and experimental fields, acting also as to provide for future expansion of the settlement. Cultivation plots for each family would be distributed throughout the surrounding area. **(Fig.5.6)**

These settlements were conceived as self-sustained rural communities, in which 20% of the inhabitants would not be peasants. They would also include spaces for the new district authorities and elected councils, which the Government promoted to replace customary authorities.

Contrary to the customary laws, under which land use rights were permanently assigned to individuals through membership in a chief's following, housing and the assignment of land in the new settlements were the responsibility of two government departments: the Commissioner of Town and Country Planning and the Department of Agriculture, respectively. While the details of these two processes were rather loosely outlined in the whole project, the Greek firm focused mainly on designing the public infrastructure. In doing so, it further suggested their importance for attracting inhabitants to the new settlements, as well as their significance — together with public spaces such as pedestrian roads and small neighbourhood squares — in nurturing social interaction. Public spaces, the firm claimed, would also accommodate existing cultural activities, such as the "public gatherings", "open air markets", "dancing" and other performances, that DA systematically documented during rural surveys.[590] **(Fig.5.7)** The plans consciously avoided continuous linear paths so as to avoid unobstructed views to the surroundings, and to delineate the difference between interior and

589 'Rural Townships of Zambia – General Report', 15 December 1967, Archive files 24657, Doxiadis Archives, p.90.
590 *Ibid*, p.79.

exterior. The condition of spatial confinement was supposed to generate an urban atmosphere and enhance the sense of belonging to a particular community.

The firm saw rural life taking place 'neatly' within self-sustained communities, while expressing faith that spatial order and everyday practices could gradually shape new social identities. Overlooking the wider tribal and linguistic differentiations that organised the rural population into larger cultural/political groups,[591] as well as other existing divisions within the peasantry and within households, the design approach of these settlements ignored realities on the ground. It also presupposed the rural population's willingness to inhabit the settlements, as well as the State's coordinated effort to implement them.

5.4.3 Developing the countryside

As DA's work evolved, it was not only challenged by alternative perspectives, such as Kay's, but also encountered the realities of Zambia's politics, which impeded the project's progress. Various factors remained outside the Greek planners' control, such as the allocation of development funding (still constrained by other sectors' needs), the challenges of decentralisation policies, and the population's uncertain response to agricultural policies and resettlement planning.[592] In addition, disputes between the two main departments involved in the project, the Commissioner of Town and Country Planning and its collaborator, the Department of Agriculture, created further complications. The Commissioner was committed to the President's and ruling party's modernisation agendas and advocated State intervention in rural areas. However, officials of the Department of Agriculture, who inherited a late-colonial mentality, were against regrouping and resettlement policies, often criticizing the government's eagerness to transform existing conditions in the rural areas.[593] As a result, debates regarding priorities for rural development were politically charged and reverberated

591 See W. Tordoff, *Government and Politics in Africa*. London: Palgrave Macmillan, 2002, p. 83.

592 For some of these factors see for example, D. Siddle, 'Rural development in Zambia: A Spatial Analysis'. *The Journal of Modern African Studies*, 8, 2, (1970), pp. 271-284, and P. Ollawa, 'Rural Development Strategy and Performance in Zambia: An Evaluation of Past Efforts', *African Studies Review*, 21, 2, (1978), pp.101-124.

593 DOA was in a rivalry with the Department of Co-operatives and also criticized the Government's distribution of tractors and the mechanization of agriculture. See A. Bowman, 'Mass Production or Production by the Masses? Tractors, Cooperatives, and the Politics of Rural Development in Post-independence Zambia', *The Journal of African History*, 52, 2 (2011), pp. 201-221.

with anti-colonial sentiment, generating tensions among those actors involved in the planning process.[594]

Faced with these challenges, the firm was alarmed by delays to the project, almost two years after it was assigned. Despite efforts by the Athens and the Lusaka offices to put pressure on government officials and local authorities,[595] the firm lacked certain information — such as topographical maps, water and soil studies — and managed to complete only twelve out of sixteen settlement plans. While official approval for the completed twelve studies was still pending, and wishing to overcome the deadlock, Doxiadis reminded the government of the scale and urgency of the problem:

> The greatest problem in the rural areas of Zambia which are inhabited by about 3.000.000 people is the complete lack of organisation without which no economic or social life and nor development are possible. […] I do not know of <u>any</u> country in the world that faces such a grave problem of lack of organisation.[596]

With this dramatic message repeated in his various letters, Doxiadis seemed also to warn the government that implementing a limited number of rural settlements, would have no significant impact on solving national-scale problems. Consequently, he stressed, the failure of rural development policies would create even more pressing issues anticipated to arise "[from the] huge invasion of the urban areas by the rural dwellers."[597]

Considering the completed studies of the twelve settlements only as pilot projects, DA continued to explore a more widespread strategy on a national scale through a self-funded study titled "Organization of the Countryside."[598] The Greek firm used the study

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594 In meetings with the Greek planners, the Commissioner P. M. Muyangwa accused DOA officials for deliberately delaying soil studies required and for continuing 'colonial policies, that aimed to keep the population in isolation and uncivilized.' Stated in letter of D.Soteriou from the Lusaka office to central offices in Athens, 14 June 1968, Archive files 24669, Doxiadis Archives.

595 Doxiadis and A. Symeon both wrote to P. M. Muyangwa on 18 May 1968 and 28 June 1968 regarding delays. Archive files 24667, Doxiadis Archives.

596 C. Doxiadis, 'A special program for the organisation of human settlements in the rural areas of Zambia', 4 March 1969, Archive files 24672, Doxiadis Archive.

597 *Ibid*

598 'Zambia: Organisation of the Countryside', June 1968, Archive files 24672, Doxiadis Archive.

(accompanied by a quantifiable long-term investment plan, structured in five-year phases) to convey another message to the government: that the main way to contain rural-urban migration was through significant investments in public facilities and infrastructure to develop the countryside.[599]

With this new study, the firm also adjusted its planning strategy, trying to walk a fine line between different expressed government priorities, while remaining committed to its client's rhetoric about a nation-wide strategy for rural areas. Echoing Kay's and the Department of Agriculture's warnings against larger settlements, DA's study proposed a two-level service centre for 7-10.000 inhabitants called a "Development Unit." With this proposal, the firm's initial vision of a hierarchical network of rural communities at different scales, which included the creation of larger settlements (the rural "market towns" of 50.000 people), was abandoned.

The firm's planning strategy shifted from a vision of concentrating population in ordered, standardized 'urban' settlements to one of public and commercial infrastructure nodes spread throughout the countryside. DA's "Development Unit" was thus an effort to find a compromise between "economies of scale" and the country's prevailing modes of cultivation, which were predicated on low agricultural productivity and low population densities. The outlines of an abstract model emerged out of this calculation. First, the time to walk the maximum distance was estimated at three hours from the main service centre. This included less frequent trips, such as to the health care centre, warehouses, shops and secondary education. One hour of walking for 2.5-mile distance (4 km) covered everyday trips to cultivated fields and local service centres, such as the primary school, the dispensary, the church and the local shop. These key dimensions were then crossed-checked with estimates regarding the human-carrying capacity and percentages of cultivable land, which according to DA, came from soil surveys and studies of the Department of Agriculture. Based on studies which showed the average size of cultivated fields in the country at between 3 and 15 acres per family, the firm accepted that 20 acres could support one family practicing non-

599 The country's double-digit rates of economic growth, driven by high copper prices, made the firm optimistic about proposing a large public investment over a 30-year period to develop the countryside. *Ibid*, p.67

mechanized dry farming.[600] Based also on the assumption that 40% of the total land would be arable, the firm suggest that the total area of 100.000 acres in the "Development Unit" could support approximately 2000 farming families (10.000 inhabitants), by distributing 20 acres of arable land, along with an extra 20 acres of low quality land for other uses. [601] **(Fig.5.4)**

DA's land-use model anticipated an increase in population density to 64 inhabitants per square mile — still significantly more than most areas of rural Zambia, where population densities ranged from 3 to 40 inhabitants per square mile. It was also quite close to Doxiadis' estimate of 53 inhabitants per square mile for agricultural settlements, which he said applied to the "average village in the world."[602] Still, neither the Greek firm, nor local government officials, had enough data to render a detailed understanding of the diversity of rural Zambia.[603] Consequently, this study was based on many assumptions and generalizations such as the average family size and the rate of the population growth in rural areas, as well as variations in soil quality, productivity levels, crop types, surplus and non-agricultural uses of the land, and much more, in what was obviously a multi-varied and changing situation. The Greek firm's preference for standardisation and claims of optimization were employed once more, using the "Development Unit" as a universal model that tried assiduously to overcome inadequate information and miscalculation. Separate studies, the firm asserted, could adapt the model to the particular circumstances of the location, while this planning method, it claimed, "will ensure constant progress regardless of the special conditions prevailing in each area."[604]

Overcoming the complex issue of siting the "Development Unit", the firm simply distributed 300 'Units' in relation to existing population numbers in each of the country's eight provinces and left their exact position to be decided later. DA's persistent efforts to situate the development of rural settlements on a national scale, were partly based on trying to convince the government of the urgent need for a long-term program, as well as a desire to secure the

600 'Rural Townships of Zambia – General Report', 15 December 1967, Archive files 24657, Doxiadis Archives.
601 20 acres are equal to 0.08 km2 and 100 000 acres to 156 miles2 or 404 km2
602 C. A. Doxiadis, *Ekistics: An Introduction to the Science of Human Settlements* (London, Hutchinson, 1969), p.88.
603 S. Berry, *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa* (Madison, Wis, University of Wisconsin Press, 1993), p.5.
604 'Zambia: Organisation of the Countryside', June 1968, Archive files 24672, Doxiadis Archive, p.48.

firm's participation. By proposing a universal model applicable throughout the countryside, the firm also demonstrated its commitment to the egalitarian distribution of land and public infrastructure to Zambia's rural population. It may also have been trying to catch the President's attention once again.

However, the firm's planning approach adapted to the country's dynamics and its multiple reactions to the challenges of rural development. The firm eventually moved away from accelerating the socioeconomic development of rural Zambia through large-scale, top-down urbanisation, towards a phased implementation of service centres. In this way, they tried to bypass the controversy over resettlement policies. DA even suggested that these rural centres could "survive in all future phases of development […] irrespectively of how the people are going to settle within them in the next few generations,"[605]:

> These [service] centres will act as poles of attraction for the farmers and will improve the standards of living and incomes in the surrounding area, by bringing people into contact and directing rural economy towards the road of barter and trade.[606]

Showing (now) a more modest confidence in whether modern planning and professional agriculture were really the better alternative, DA's strategies did not resonate well with the large-scale top-down urbanisation of Zambia's countryside, analysed before. And they were not in line with Doxiadis' initial vision of 'leap-frogging' rural development. He had emphasised that the firm's strategy could help the country achieve in "one or two generations" what would normally take "four or five generations and would involve large expenses, big mistakes and great efforts [to achieve]."[607] In Doxiadis' vision of accelerating rural development, even more confidence needed to be placed in planners' capacity to manage the risks and tensions created by social, cultural and political transformation, in the name of postcolonial development. It also presupposed the increased capacity of the central State to mobilise large budgets and to coordinate administrative resources for such ambitious

605 C. Doxiadis, 'A special program for the organisation of human settlements in the rural areas of Zambia', 4 March 1969, Archive files 24672, Doxiadis Archive.
606 'Zambia: Organisation of the Countryside', June 1968, Archive files 24672, Doxiadis Archive, p. 298.
607 C. Doxiadis, 'Conception of Settlement Patterns', 2 April 1968, Archive files 24666, Doxiadis Archives [In Greek].

projects, even if government and society remained ambivalent about the direction rural development policies were taking.[608]

Another consideration in rural planning was also becoming evident in Zambia's case. Using knowledge generated by the surveys, DA also proposed small-scale interventions such as "the construction of a pier to facilitate communication between the two banks of the rivers when it is in flood"; "the construction of bridges over the two rivers in the area to provide easy access to the fertile land"; the improvement of a road connection; and the creating of facilities for the marketing of a particular product.[609] Contrary to the implementation of standardised rural settlements, small-scale interventions could have made a more cautious response to the realities on the ground, that was more responsive to existing social, economic and ecological practices. Such interventions might also have made relations between the State, experts, and local society less antagonistic. While such an approach was never explicitly promoted by Doxiadis Associates, the firm's encounter with rural Zambia and its politics seemed to require a response to a whole new set of planning priorities which, seen in retrospect, exposed both the challenges of modern planning and the complexities of rural development planning in Sub-Saharan Africa.

5.5 Urban vs. Rural bias

At the end of the 1960s, the country was experiencing the consequences of intense rural-urban population movements,[610] which not only drained skilled labour out of the rural areas but also raised demand for food production. This also created housing and job pressures in the urban centres. Doxiadis continued his painstaking efforts to keep the rural settlements project alive by constantly urging top Government officials to develop a national strategy for the countryside. He continually argued that a large-scale strategy to organise the rural areas was the best way to manage the rising economic, social, and environmental tensions between

608 There were prominent political figures at the time, like Valentine Musakanya, who was Minister of State and Bank Governor in Zambia, who also strongly voiced their rejection of rural settlement projects. See V. Musakanya and M. Larmer, *The Musakanya Papers: The Autobiographical Writings of Valentine Musakanya* (Lusaka, Lembani Trust, 2010), pp.122-123.

609 'Zambia: Plans for Twelve Villages Completed', *DA Review*, December 1969, p. 11.

610 Between 1963 and 1969, urban growth had risen to an average of 8 per cent a year. See, W. Tordoff, *Politics in Zambia* (Berkeley, University of California Press, 1974), p.376.

urban centres and rural areas.[611] Soon afterwards, the Government tried to address these problems through special action programmes for urban resettlement and self-help housing projects in the periphery of the capital. These were also assigned to the Greek firm, together with the design of the Master Plan for Lusaka (the country's capital) and other peripheral projects.

However, the country's strategies on rural development continued to be fragmented and uncoordinated. After his re-election in 1969, Kaunda made another attempt to revive the co-operative societies in rural areas through new legislation in December 1970.[612] Acting under political pressure, Kaunda tried to deliver on economic promises extending the State's control over the private sector economy and the land (for example changing any freehold rights to leasehold). Despite these significant policy and economic changes, the government's economic policy, which favoured urban and industrial development, was a failure. Urbanisation accelerated during these years, whereas peasants seemed to fall behind. Rural development became a central political issue as the new Government's Vice President, Simon Kapwepwe,[613] criticised Kaunda's modernising rhetoric, which had ultimately privileged urban elites and foreign capitalists rather than promoting the indigenization of the economy and culture.[614]

Doxiadis Associates' local office followed these political tensions closely, exposing in internal correspondence their allegiance to the President's politics and the tenets of modernisation. Writing to Doxiadis, Kostas Kakisopoulos, the firm's representative in Lusaka, interpreted the political debates as follows:

611 Expressed in Doxiadis' letters in September 1970, to the Minister for Development and Finance and the Minister of Rural Development. Archive files 24667, Doxiadis Archives.

612 According to Tordoff, Kaunda's new Co-operative Societies Bill was introduced with a shift to a more authoritative tone suggested by his statement that 'Self-reliance is our goal but we have to organize the people to be self-reliant'. See W. Tordoff, *Politics in Zambia* (Berkeley, University of California Press, 1974), p. 387.

613 Kapwepew broke with the UNIP in 1971 and became the leader of a new, northern-Bemba dominated party — the United Progressive Party (UPP)

614 The replacement of colonial street and town names with local language names, preserving indigenous languages (7 different languages), and following a local, rather than European, dress code. For an account of these debates, See F. Soremekun, 'Zambia's cultural revolution'. *Présence Africaine* 73 (1970), pp. 189-213.

> Two movements exist: on the one side, the progressive, pro-western, even pro-Russians–the INTELLIGENTSIA-and on the other, the conservatives; the believers in local culture, asking for emphasis on rural development who are moved by the Chinese CULTURAL REVOLUTION. The second movement is promoted by the V.[ice President] has a massive popular support–that is natural. I think it is inevitable that the first movement will prevail. Will this take place smoothly, or after several shocks?[615]

The answer to Kakisopoulos' question was given in 1973, when Kaunda declared a one-party stated, banning all other parties and silencing opposition voices. Cooperation between party and State would grow, supporting a widespread effort to mobilize the rural population at the village level for political and developmental goals, in what was described as the "Zambian one-party participatory democracy."[616] Zambia, however, never followed Tanzania's extensive contemporary villagization policy which forced millions of people into planned villages. Even under a more authoritative government, Zambia's rural policies remained fragmented. Among the reasons was that in 1974-5 the world copper price declined by half.[617] This drop exposed both the country's failed previous attempts to disengage from its economic dependency on mining and its unsuccessful efforts to develop the agriculture sector either for exports, or as a home market. Despite the country's double-digit economic growth, fuelled by rising copper prices at the end of the 1960s, the redistribution of resources and wealth which Kaunda and Seers imagined was never achieved, and the gap between urban and rural areas in wages and standard of living remained significant. As Bratton showed in the midst of the 1970s crisis, "nine out of ten rural house-holds remained in the small-scale subsistence sector […] producing primarily for their own consumption and earning only marginal and sporadic incomes from cash sales."[618]

615 This topic appears in different letters of Kostas Kakisopoulos, who reported to Doxiadis frequently on tensions between the "progressives" arguing in favour of "adjustment in an ever changing world" and the "conservatives that celebrated village life and dismissed foreign cultural elements." See Kakisopoulos' letters to Doxiadis on 22 February 1969 and 17 January 1970. Archive files 19200, Doxiadis Archives.

616 See M. Bratton, The Local Politics of Rural Development: Peasant and Party-State in Zambia. (Hanover, N.H., University Press of New England, 1980), p.39

617 *Ibid,* 31.

618 *Ibid,* 28.

In studying the consequences of Zambia's rural politics at this time, Bratton would outline the main themes around which an interdisciplinary scholarship would later develop: the role of the state in the reproduction "[of] patterns of uneven development" at the local level, which left a rationally acting peasantry competing for scarce resources.[619] These themes—the hypertrophic central State, the urban-rural gap and the agency of the rural poor—would become the World Bank's main arguments for promoting an extensive aid program of "integrated rural development" for Africa and the rest of the Third World in the 1970s and 1980s.[620] The aim of these agendas was to undo what appeared to be interventionist and urban-biased policies which had impeded African countries' comparative advantage—agriculture—while also failing to eradicate poverty. By eliminating State subsidies, cutting urban wages and privatizing State-owned industrial and other companies Zambia, like other African countries, was offered in the mid-1970s the solution of focusing on small scale farming. At the time, this was considered more productive, more competitive, and more attuned to these countries' farming culture. The assumption was that small-scale farming would attract the unemployed and rural poor, solving poverty, but also achieving economic growth within a globalizing market. In this new developmental vision, the State would no longer be the main agent of planning and implementing policies. Instead, the environmental and market risks of farming, once managed by the State, would now be distributed through free-market mechanisms directly to the small- scale farmers,[621] which had to compete with

619 *Ibid.*

620 In 1968, World Bank's policy shifted when Robert MacNamara became its President and rural development in Africa became the Bank's priorities. Almost forty per cent of the Bank's investment went to small farmers and the rural poor. For a critique of the World Bank's focus on small-scale farmers For a critique on these agendas, see C. Payer, "The World Bank and the Small Farmers." *Journal of Peace Research* 16, no. 4 (1979): 293-312. For continuities between World Bank's 1970s agendas and late-colonial projects in Africa see J. Hodge, 'British Colonial Expertise, Post-Colonial Careering and the Early History of International Development', *Journal of Modern European History* 8, no. 1 (2010): 24-46.

621 In a recent World Bank document on Zambia' agriculture: "private marketing costs may have increased after liberalization; and certainly a much higher level of risk has been passed on to farmers." P. Robinson, J. Govereh, and D. Ndlela. *Distortions to Agricultural Incentives in Zambia*. No. 48516. World Bank, 2007.

organised "agribusiness."[622] This extensive liberalisation, was seen as leading to the State's withdrawal from its responsibility to relieve poverty and protect underprivileged citizens.[623]

5.6 From Zambia to Ecumenopolis

The various policies and programs promoted in subsequent years made Zambia and other African countries, an uninterrupted experiment in rural planning and agrarian development, a laboratory from the early 20th extending well into the 21st century.[624] The impact of the particular challenges of Zambia's rural development can also be traced in Doxiadis' research activities. DA's encounter with this project's priorities not only exposed a long thread in Doxiadis' experience of rural planning, from early to late stages of his career. It also highlighted his preoccupation with decentralization and middle-size settlements, explored also as an alternative model to an industrialized urbanism and its planetary ill-expansion in the future. In these visions, Doxiadis defended settlements for between 5 and 10.000 inhabitants—like those DA had proposed in Zambia—as the smallest 'cells' of human community and underlined their importance in the "coming universal city."[625] Stressing also the need to find "a balance between urban and rural forces"[626] Doxiadis complemented the futuristic vision for a planetary city—the so-called Ecumenopolis—with strategies for the protection of the planetary 'garden', the Ecumenokepos.[627] DA's encounter with rural Zambia's socioecological complexities fit well with Doxiadis' late efforts to introduce ecological perspectives and to refocus his all-encompassing Ekistics theory, which tried to shape 'balanced' relations between Anthropos (man), nature, shells, networks, and society. In this respect, Doxiadis Associates' rural settlements in Zambia might have been an

622 H. Bernstein, 'Rural Land & Land Conflicts in Sub-Saharan Africa', In S. Moyo, and P. Yeros, eds., *Reclaiming the Land: The Resurgence of Rural Movements in Africa, Asia & Latin America* (London, Zed Books, 2005).

623 As Davis highlights in his analysis of mid-1970s development planning: "Praising the praxis of the poor became a smokescreen for reneging upon historic state commitments to relieve poverty and homelessness." M. Davis, *Planet of Slums*. (London, Verso, 2006), p.72.

624 Reports in the 1970s explored solutions to rural development problems which were aggravated during the First and Second National Development Plans, such as the World Bank report in 1975 and another report by the French agronomist and socialist Rene Dumont in 1979. All these led to the announcement of various rural policies such as the Operation Food Production in 1980 and the recommendations for village development centers in Zambia's Third National Development Plan (1979-83).

625 C. Doxiadis, 'Of Urban and Rural Forces', Public lecture at U.S. Department of Agriculture, 1967, Archive files 2905, Doxiadis Archives, p.106.

626 *Ibid.*

627 P. Pyla, 'Planetary Home and Garden: Ekistics and Environmental-Developmental Politics', *Grey Room* (2009), pp. 6-35.

experiment for a future yet to come, and a history of rural development planning in Africa, which has been only partly told.

6 From the perspective of the rural: A conclusion

6.1 Thesis' Summary

This thesis investigates the complexities of development agendas and their spatial impact by examining the genealogies of rural planning in Doxiadis Associates from the 1940s to the 1970s, paying particular attention to the firm's projects in postcolonial Sub-Saharan Africa.

This analysis begins by examining Doxiadis' role in the Greek Reconstruction where an episode critical to the understanding of these genealogies of rural planning is found. Doxiadis attempted to formulate Ekistics as a spatial planning framework and state-led policy on settlements, amidst local and international architectural debates and social, political and ideological tensions around Greece's post-war reconstruction. By revisiting these episodes, this thesis exposed Doxiadis' multiple intellectual influences, highlighting especially Walter Christaller's economic-geographical studies, which informed both the formulation of Ekistics, and Doxiadis' spatial visions for Greece's reconstruction. From Christaller, Doxiadis adopted assumptions on the primacy of spatial-economic 'laws' qualifying spatial/settlement planning as a "complex national problem, connected to production, transportation, [and] economy." He also espoused biological/organic metaphors for the analysis of human settlements as complex socio-spatial phenomena and as a crucial index of the quality of human life and social unity. Accordingly, he imagined the Greek Nation as an 'organism' and the Reconstruction as a planned transformation for restoring the country's socio-economic unity after the War.

In this context, Doxiadis, as the Undersecretary for Reconstruction, developed national-scale strategies which made rural settlements and housing reconstruction central to the country's economic recovery and modernisation, as well as to nation-building. By restoring networks of small rural settlements, Doxiadis aspired to assist recovery from the destruction of the Second World War, stabilise the rural population and restore agricultural production. As demonstrated, these resettlement strategies reflected both the country's deep-routed inter-war refugee resettlement experience, as well as the contemporary international scientific and policy-making debates. Contrary to the Greek government's and various professional groups' aspirations for industrialisation, international aid and foreign investments, Doxiadis' approach was based on existing land patterns and agricultural production and dimensions of

rural settlements that were connected to small landownership. This approach was adapted to the political and economic direction introduced after 1947 by the American missions, whose goal was to minimize state funding and mobilise private capital. Subject to these priorities, the reconstruction project's principal approach for the rural settlements turned into an extensive self-help housing program that utilised the labour of rural families to overcome the lack of state capital investments. At the same time, the self-help housing program served both as an integration policy for the rural population and an ideological / geopolitical vehicle that connected the rebuilding of the country with repelling the 'communist threat,' and with a 'hearts and mind' campaign during, and especially after, the Greek Civil War. Greece's reconstruction, this thesis argues, became for Doxiadis a crucial field in which to experiment with spatial planning visions and tackle the challenges of implementing his plans in a context of socio-political dynamics/tensions, Cold War conflicts, international interventionism, and a lack of state capacities and state capital — as well as ambiguities over the desired/ suitable development model.

Moreover, the thesis contends that Doxiadis' spatial visions, as promoted in the case of post-war Greece, contributed significantly to the shaping of international development agendas for US and UN technical assistance programs in Southeast Asia and elsewhere during the 1950s. In this context, this thesis further examines Doxiadis' participation in transnational networks of planning and architecture which promoted low-cost, local self-help programs, settlement planning and regional planning to guide the spatial project of development in the non-industrialised world. Working within these transnational networks along with prominent Western architects operating in the Third World (such as Jaqueline Tyrwhitt, Jacob Crane, Ernst Weissmann) and visiting many different 'underdeveloped' countries as part of development missions (India, Syria, Pakistan), Doxiadis expanded his planning framework while shaping Ekistics in alignment to US/UN international developmental agendas which also focused on rural contexts.

The prominence of rural areas, and their socioeconomic development, was central to most of these countries, as in Iraq, where Doxiadis Associates was assigned the planning of Greater Mussayib. This project was part of the State-led land redistribution policy, which aspired to transform landless farmers into smallholders. While much of the current scholarship has

focused on Doxiadis Associates' attention to local 'vernacular' traditions and adaptation to climatic conditions, this thesis further highlighted how the firm's spatial planning approach actually focused on a much wider socio-spatial reorganisation of the rural landscape. This reorganisation involved, among other things: redistributing land; providing access to natural resources; incorporating an irrigation system; developing technical and social infrastructure, such as settlement planning and designing public spaces; and integrating rural communities into broader national/regional networks.

Doxiadis and Doxiadis Associates gradually projected the vision of interconnected settlements and communities onto a planetary scale. As the thesis subsequently analyses, these spatial visions formed the basis for re-formulating Ekistics into a 'scientific' field and a transnational practice addressing a range of geographical scales, from the local to the planetary — effectively questioning the 'rural vs. urban' binary. Ekistics' rescaling was also informed by parallel activities initiated in the 1960s: the research projects of the Athens Centre of Ekistics and the annual meetings of the Delos Symposia, both of which promoted international intellectual exchanges among various scientific and spatial disciplines. These exchanges, which reflected the shifting intellectual climate of the 1960s, introduced economic, social, cultural and ecological considerations into spatial development and physical planning. Within this context, Doxiadis and his close collaborator John Papaioannou formulated the futuristic vision of Ecumenopolis, with the aim of resolving the ambivalences between economic growth, technological development and protection of the environment at a planetary scale. Ecumenopolis exemplified a vision of spatial planning as a managerial and technocratic response to socio-environmental crises emerging from the acceleration of urbanisation in different areas of the world. As this thesis further argues, these visions lent validity to Doxiadis' thinking and to Doxiadis Associates' planning practices, which were based on the assumption that by 'fixing' the size of settlements and population at certain scales, planning could control, regulate and guide socioeconomic development in different contexts.

To further unpack questions of scale and the speed of urbanisation, this thesis focuses on the work of Doxiadis Associates in postcolonial Africa, at a time when these challenges drew the attention, not only of international development agendas for Africa, but also of African governments undergoing decolonization and nation-building. Accelerating or decelerating

transformations on various scales was central to Doxiadis Associates' spatial visions and their planning projects in different African countries while fitting into the rhetoric of certain African leaders about promoting alternative development patterns in the name of Pan-Africanism and Non-alignment as a way to transcend neo-colonial dependencies and Cold War polarities. These developmental priorities and aspirations of African governments were further explored by focusing on the complexities of rural development agendas in sub-Saharan Africa in the late 1960s and early 1970s. The thesis analysed Doxiadis Associates' vision for the development of rural networks in post-independence Zambia as an ambitious strategy to alleviate rural-urban migration and to manage the rising tensions between urban centres and rural areas. This project involved both a regional concept for the hierarchy, including the spatial delineation of settlements, and the planning of the settlements themselves. The thesis illustrated how this project was framed by decolonization and nation-building visions, economic 'dependency' theories, and colonial agrarian legacies. As the final part of the thesis shows, the firm's encounter with the challenges, political tensions and scientific debates around rural development in Zambia, demanded a response to a different set of planning priorities. Consequently, Doxiadis Associates' large-scale vision for 'urbanising' Zambia, and Africa, were questioned, which caused them to contemplate more cautious responses. Such considerations about the social, ecological and political challenges of spatial development processes also informed Doxiadis' Ecumenopolis project in the late 1960s, and were aligned with broader shifts which introduced ecological perspectives and social considerations into developmental agendas.

By selectively focusing on key projects of Doxiadis Associates' conceptual and planning work, this study not only explores how development discourses shaped spaces and landscapes, but also traces the multiple ways in which architecture and planning actively shaped development agendas in the non-industrialized world. In analysing Doxiadis Associates' multi-scale practice in the context of broader transnational networks and flows of capital, ideas, and expertise, this thesis investigates how issues of human settlement, spatial organisation and infrastructure became key in the economic and socio-political agendas of international actors and nation-states. By further contemplating the multiple responses to these agendas, this thesis examines Doxiadis Associates' spatial visions in conjunction with various epistemologies, cultural and social claims, all of which contributed to shaping the contested

field of development. In doing so, this thesis exposed the centrality of the rural in Doxiadis Associates spatial visions and their ties to post-war development agendas, in and beyond, postcolonial Africa.

6.2 The 'rural' in Ekistics and Ecumenopolis. Beyond the rural-urban divide

This thesis argues that the term *rural* allows for the creation of **a privileging perspective that enriches our knowledge of Doxiadis and Doxiadis Associates** beyond the well-established historiographies that portray Doxiadis as the epitome of the modernist 'urban' planner. By studying the multiple genealogies of rural planning in Doxiadis' thinking and DA's practice—from the Greek Reconstruction all the way to postcolonial Africa—this thesis exposes an under-studied theme in the scholarship of Doxiadis and Doxiadis Associates. The analysis of Doxiadis' rural planning projects at the intersection of international developmental agendas, Cold War geopolitics and Third World aspirations, further expands Doxiadis' scholarship. By highlighting the centrality of the rural in spatial visions, architecture and planning, this thesis also aspires to mobilize an **alternative historiography of post-war architecture** and planning and contribute to current studies that focus on the critical role of space and architecture Third World development.

The notion of the *rural* is crucial for shaping alternative perspectives on Doxiadis' spatial visions and Doxiadis Associates' planning practice from the mid-1940s to the mid-1970s, enabling us to reconsider the formulation of Ekistics and Ecumenopolis, two of Doxiadis' key visions/concepts.

Rather than understanding Doxiadis as an 'orthodox' modernist urbanist and Ekistics as a tool for standardisation and systematisation of urbanisation, this thesis' emphasis on the rural has exposed a more complex history and planning approach. We have shown that the formulation of Ekistics was informed by and employed in Doxiadis engagement with rural resettlement projects, village planning and broader ruralisation processes. From the mid-1940s to the end of the 1950s, Ekistics would be shaped by Doxiadis in his engagement with multiple contexts of the non-industrialised world—Greece, India, Iraq, Syria, Pakistan—and with different actors who focused on rural areas to promote national and international development

agendas. Through these engagements, Doxiadis would construct the rural both as a real, and as an imagined geography/field which would also become a critical foundation to consider the interdependence of the city and the countryside, and to contemplate the social, economic and cultural dynamism and the interconnectedness of settlements at different scales. These different and overlapping understandings of the rural were shaped along with Ekistics and can be seen as forming a conceptual thread in Doxiadis' thinking.

Doxiadis' understanding of Ekistics was influenced by different intellectual sources and institutional changes before, and during, the Second World War; but it was also reframed and informed by the different projects in which he actively participated from the mid-1940s to the end of the 1950s. As shown in this thesis, Doxiadis' attempt at formulating Ekistics as a planning framework in the mid-1940s conceived planning as a multi-scale practice broadly associated with a process of organisation, or arrangement, of space. On this basis, Doxiadis developed a notion of spatial planning that considered the multiple dimensions of space — physical, social, economic, political, cultural, environmental — and their interconnections. This understanding of planning merged overlying theoretical and empirical influences: 'organic' metaphors, spatio-economic models, and European regional planning cultures. All these parameters informed Doxiadis' formulation of Ekistics through a concept of human settlements as complex spatial establishments interconnected with their physical surroundings but also with each other. Envisaging these interconnections as a form of network, Doxiadis also considered infrastructure, rather than just buildings or public urban spaces, crucial to a conception of space as having broader socio-economic implications. From this perspective, he questioned narrow categorizations of settlements as either urban *or* rural as well as the city vs. countryside divide. Instead, he adopted a classification of settlements based on hierarchical scales defined by socio-spatial dimensions, such as population (demographics) and their territorial dimensions, echoing the strong influence of the German geographer Walter Christaller on his own thinking, as discussed extensively in Chapter 1.
This thesis exposed these ideas in Doxiadis thinking and the formulation of Ekistics but also in the ways these ideas became instrumental in shaping different rural planning projects, from Iraq's Greater Mussayib project all the way to Zambia's countryside. In analysing these projects' goals and planning strategies, this thesis highlighted persistent themes in Ekistics, as a theory and as a practice, which can shed light on Doxiadis' preoccupation with decentralized

structures and networks; hierarchical analysis of human settlements, and cross-scale management of population and resources. In other words, rural planning projects, not only revealed powerful theoretical influences that had shaped Doxiadis' thinking, but they also expose the potential of Ekistics as a multi-scale, spatial planning framework which would incorporate buildings, infrastructures, resources, and the landscape: both urban and rural.

As this thesis showed, this complex understanding of spatial planning, and the assumptions about the 'organic' interconnection of society, settlements and nature, were exemplified in the emblematic vision of Ecumenopolis. Based on the scenario of a continuous population increase and corresponding urbanization on a planetary scale, Ecumenopolis envisioned the creation of a future/planetary-scale network of settlements. It also exposed a claim on spatial planning's capacity to ameliorate the uneven social and environmental impact of development. In this planetary vision, the spread of technology and industrialized methods of agricultural production would lead to the emergence of a "new rural" as Doxiadis and Papaioannou claimed. The "new rural" would be defined by "the small size of the settlements and the isolation from large urbanized areas" and by the need for "isolation and seclusion, or for purposes of recreation and tourism, for scientific exploration, or for technological or economic development." [628] Beyond the idea of 'escape', which is among the persistent definitions often ascribed to the notion of the rural, Ecumenopolis redefined the rural, by subsuming it into a planetary 'hinterland' where production and various forms of development along with natural reserves would all comprise the vast planetary garden of Ecumenokepos. The rural in the future urbanized planet would be both a place to escape to, a locus of food production and an intermediary zone between 'urban' life and nature.[629]

Both the Ecumenopolis and Ekistics concepts are here understood as contemplating the divide between urbanization and ruralization, as well as the major post-war consequences of either desired development orientation — industrialization or agricultural restructuring. These binaries were at the heart of the academic, scientific and policy making debates of the

628 See C. Doxiadis and J. Papaioannou, Ecumenopolis: The Inevitable City of the Future, (New York, Norton and Company, 1974), p. 252.

629 See J.Papaioannou, 'The Rural Component in the Age of Ecumenopolis,' Ekistics, Vol. 51, No. 304, 1984), pp. 71-74

post-war era and formed the intellectual basis for ambitious political development projects and extensive agrarian reforms (e.g., in China and India). During the post-war era industrialization was viewed in development circles as a primary development goal for the economic development of the 'underdeveloped' countries of the Third World, while shortages of capital and labour surpluses were seen as the main obstacles. The rural sector was often distanced from the urban, on the assumption that an "agricultural revolution" would be necessary for industrialisation to proceed.

However, as this thesis argues, both Doxiadis' Ekistics and Ecumenopolis concepts attempt to go beyond the urban-rural divide and transcend the era's debates about the relationship between industrialization and agricultural restructuring. They may tend to imply the prominence of the 'industrial' and the 'urban', but they also redefine the 'rural' and suggest more generic concepts of spatial organization, consisting of decentralized networks of settlements and landscapes. Evidently, both concepts were redefined and reformulated as Doxiadis Associates assessed the experience gained, and the challenges posed by, the 'urbanization' and 'ruralization' processes when shaping rural landscapes in development — as will be examined below

6.3 Shaping rural landscapes: Infrastructures, land patterns and self-help housing

This study's focus on the genealogies of rural planning in the work of Doxiadis and Doxiadis Associates has also shed light on the **critical role of infrastructures and self-help housing** in post-war architecture/planning and developmental agendas for the rural areas. By examining transport networks, public and social infrastructures and self-help projects, this thesis expands scholarship on Doxiadis Associates beyond the emphasis on housing design and emblematic urban planning projects. More importantly, this thesis' cross-contextual focus on projects in Greece, Iraq and Zambia, shapes a comparative perspective that traces another 'paradigm' of post-war spatial planning. This can be seen emerging out of Doxiadis extensive experiences with rural settlements/infrastructure, self-help housing projects and the shaping of productive agricultural landscapes, in diverse contexts. By merging these perspectives, this

thesis has also gained insights into Doxiadis Associates' spatial visions which intersect on different geographical scales with supra-national visions, international economic agendas, and national/local politics.

This multi-scale approach can be traced back to Doxiadis' experience with the Greek Reconstruction which involved a **nation-scale vision of reorganisation** of administrative structures and the overall upgrading of 'outdated' rural settlements. The uniformity and standardisation of the new settlements constructed under Doxiadis, as well as the overall policy, were in accordance with existing settlement sizes, land use patterns and the prevailing small landownership scale. Rather than extensive transformation, these strategies implied improvement, local-scale modifications and gradual change. According to Doxiadis, these planning strategies, which were seen as more appropriate to the country's needs and capacities, needed to be "very 'plastic' so that they are adaptable to the combination of old and new, slowly emerging tendencies."[630]

This planned flexibility was also introduced into **architectural/design strategies on a village-scale** that delivered housing 'cores' or 'nuclei', provided by the State, which relied on 'semi-permanent' solutions—constructed with local and imported materials. These 'cores' were not merely temporary solutions. They formed a response to the urgent need for mass-housing, with the long-term goal of stabilising both agricultural population and production. It also anticipated the **inhabitants' own involvement in the future extension** of their houses and settlements, and thus responded to the urgency of the situation and the lack of State capital (Chapter 2). This logic rendered spatial development **an open-ended process, and planning as a process of shaping dynamic, semi-structured landscapes**. It also necessitated reformulating architectural expertise, not as merely the answer to design problems, responding to various challenges, but also as a form of technical aid which included consultancy and support of users.

630 C. Doxiadis, *Οικιστική Πολιτική για την Ανοικοδόμηση της Χώρας με ένα Εικοσάχρονο Σχέδιο [Ekistic Policy for the Reconstruction of the Country on a Twenty-Year Program],* Υφυπουργείον Ανοικοδομήσεως, 1947, 56.

This reformulation of Doxiadis' architectural expertise accelerated within the priorities of US-recovery programs, which aimed to minimize state (and US) funding. Extensive **aided self-help programs** followed the same architectural strategies as 'core' houses, but relied on 'voluntary' labour, and 'grass-roots' reconstruction practices which aimed to mobilize rural income, and small-scale capital investment, and to engage the population in community building processes, serving also political and ideological goals (See Chapter 2). These forms of planning promoted a **transfer of responsibility—and agency**—from the State/experts to local populations. They formulated a programmed action where informal qualities, found in Greece and other non-industrialised societies, were instrumentalised to compensate for the lack of state — and paucity of private — capital. Planning was employed in setting the rules for these processes' self-perpetuation, which was presented as a collective effort that would also nurture community ties.

Drawing on this experience, Doxiadis made housing the lowest priority for state-led planning of low-cost housing projects at the end of the 1950s (Chapter 3). Contributing to international developmental debates among UN/US architect-experts in Southeast Asia he instead advocated the **primacy of service infrastructure and community spaces**, considering housing as a field for engaging the population rather than an object of formal architecture. In this process, spatial planning and state funding were to provide the overall framework and the technical infrastructure, whereas houses could either be constructed by the people themselves, or they could be designed by employing low-cost, low-skill techniques, so as to allow future expansion by their own inhabitants.

These planning strategies responded to the quantity of capital available to the non-industrialised world, but also to the **particular land patterns and rural landscapes in diverse contexts**. By focusing on Greece, Iraq and Zambia, this thesis highlighted how Doxiadis' rural planning adapted to different land patterns and to developmental visions connected to land distribution. As analysed above, the resettlement policies in post-war Greece relied on existing land patterns as established during the inter-war land redistribution, under an economic model based on small landholders. Similarly, in Iraq, planning promoted a state-led effort at land redistribution and the shaping of small-scale family farming patterns, alongside the prevailing model of large landowners. The settlement planning of Doxiadis Associates in

Zambia was connected to a rural development vision which promoted a transition from subsistence to commercial agriculture. It was also framed by the central government's effort to distribute land to farmers. This involved questioning the local chiefs' control over the assignment of land rights.

From the above comparison of Iraq and Zambia, it can be further emphasised that Doxiadis' rural planning highlighted the **role of technical, public and social infrastructure** rather than the provision of housing. This approach was accompanied by a vision of shaping 'self-sustained' communities around compact settlement patterns. Providing social and public utilities was seen as a strategy to stabilise the population, shape collective/national identities and prevent rural-out migration (especially in Zambia and in Greece). These projects reflected Ekistics' planning framework (as explained before), which questioned the urban/rural divide. At the same time, Doxiadis Associates' spatial planning framework incorporated specific/local land patterns as these were being adjusted by developmental agendas and political processes set in motion by central governments.

In turn, this thesis argues that shaping rural landscapes in development involved formulating a spatial planning model/paradigm that advocated creating a general planning framework and public infrastructure, while directing housing production towards self-help development. This planning model aimed to respond to the urgency of the situation, the lack of both state capital and major private investments, as well as the 'surplus' of labour in rural areas. The model also had to adjust to existing land patterns and production characteristics, while introducing economies of scale. At the same time, this was a planning model/paradigm that aimed to **respond to local dynamics and the tensions around rural development** as well as challenges that might arise in implementation (as became evident both in the case of Zambia and Greece). In any case, such a planning model/paradigm had political implications, as it had to operate within the context of Cold-War geopolitics and the politics of postcolonial nation-building.

6.4 Rural governmentalities and the role of the expert

This thesis has also shed light on the **political implications of the rural**, claiming that the rural, through Doxiadis Associates' spatial visions, was also conceived as a critical geography posing potential risks on different scales: to national integrity, the distribution of power, geopolitical divides, and even the ecological 'balance' of the planet. In focusing on the Greek Reconstruction, it was demonstrated that Doxiadis' resettlement policies were motivated by an understanding of uninhabited rural areas as "a national risk" in terms of both potential external threats and internal instability. Restoring rural settlement patterns was a means not only to promote economic and demographic stabilisation but also to establish state sovereignty over territory and, in turn, to cultivate sociopolitical stability. This approach was aligned with the geopolitical priorities of both the Greek government and the US missions, which promoted the reconstruction of rural villages not only to provide relief for internal refugees but also as an anti-communist strategy of political integration during and after the Greek Civil War. The geopolitics of the Cold War further informed the international agendas of US and UN technical assistance programs to the Third World in which Doxiadis participated. Rural areas in India, Iraq, and elsewhere were placed at the centre of social engineering processes, agricultural experiments and economic development agendas. Promoting access to land, land ownership and housing was seen as contributing to social integration and minimizing political unrest. Concerns about peasant political mobilisation were also behind late-colonial planning attempts to suppress anti-colonial movements in Africa by regulating Africans' access to land, together with various forms of spatial segregation. Aiming to overcome colonial racial divisions, some postcolonial governments in Africa turned to rural development to initiate nation-building processes, as the case of Doxiadis Associates in Zambia has shown.

In the postcolonial era, governing rural areas seemed crucial for Cold War geopolitics, the post/colonial processes of nation-building and sociopolitical integration, as well as for developmental agendas**.** This complex intersection of geopolitics, economic agendas and local dynamics shaped **rural areas as a critical field of knowledge and an object of planning.** Placed at the centre of multiple scales, the rural mobilized production and transfers of knowledge from different actors: international developmental bodies, governmental

departments, inter-disciplinary teams of experts (which involved architects, economists, engineers, agriculturalists, sociologists, anthropologists), and so on. In these processes, architects and planners such as Doxiadis utilised not only quantitative tools and official statistics, but also field work, surveys, and various ethnographic methods which placed them in the field amongst the population. Surveying the local came with a technocratic claim for the systematisation of knowledge and comprehensive analysis but it was also a way to complement the lack of official data on the population and the land. Generating knowledge about rural areas was important, especially in cases where state knowledge and authority was limited. So, governing the rural areas appeared critical to expanding state sovereignty. From Greece to Zambia, as elsewhere, Doxiadis and Doxiadis Associates demonstrated a crucial form of technocratic expertise, operating on the local level on behalf of a governing authority and legitimising that authority, while identifying, recording and mapping the dynamics on the ground.

Thus, **Doxiadis' spatial visions (Ekistics *par excellence*) charted crucial fields of State intervention** promoting a rhetoric of technocratic, centralised spatial visions, but also a planning approach where spatial development was promoted in ways that responded to limited State capacities, lack of capital, local social and environmental crises, states of emergency and risks. The fact that this planning approach was more often employed in rural areas or the urban fringes offers critical insight into links between the rural and the notion of governmentality. As Foucault showed, governmentality was based, not on the idea of the State as an all-powerful actor, but rather on the logic of a 'self-governed' collective/individual subject with the power to act. We claim that Doxiadis' engagement with the rural corresponds to what Foucault understood as a "governmentality", which according to Legg "is not all about centrally homogenous enforced governmentality but rather questions the idea "of omnipotent power and the state as an all-knowing and calculative 'cold monster.'"[631]

The perspective of governmentality broadens our understanding of much of Doxiadis' spatial vision, such as the decentralized rural community, low-cost, self-help housing/strategies and their emancipatory rhetoric of mobilizing the population, providing 'humanitarian' relief, and

631 Cited in S. Legg, "Foucault's Population Geographies: Classifications, Biopolitics and Governmental Spaces." *Population, Space and Place* 11, no. 3 (2005): 137-156.

community building. It shows how these spatial visions promoted a **transfer of responsibility—and agency**—from the State/experts to local populations using space and architecture to regulate bodies, land and resources; and citizenship. Responding to Gupta's critical understanding of development not just as "a means to recolonize the Third World" but as a set of discourses and practices which "[enter] a series of relationships that institute a new form of government rationality" we argue that Doxiadis Associates' spatial visions interacted with and negotiated the emergence of "novel institutional modes for the global regulation of population, bodies, and things, of which development [was] a primary example."[632]

In turn, the perspective of governmentality, which challenges the idea of an all-powerful State, allows for a more nuanced understanding of **complex and more pervasive forms or power configurations** between state authority, social dynamics and the agency of the experts/architects/planners in relation to the politics of development and postcolonialism. Reconsidering Doxiadis Associates' "deliberately open-ended" planning projects allows us to conceptualize the governing of the rural as a dynamic process, rather than a well-calculated and planned project. This allows to revisit Doxiadis Associates' rural planning projects, not only from the perspective of the State or the expert, but also by paying attention to the "local actors [which] can within an overarching field of action still make choices and produce alternatives."[633]

6.5 The rural in the postcolonial: Future research

Rather than producing a monograph on Doxiadis or Doxiadis Associates, this thesis investigated the former's role within transnational networks of discourse, with places, ideas, epistemologies and with various actors — scientists, economists, geographers, political leaders, international organisations, governmental departments and so on. Highlighting **non-hierarchical networks of knowledge** and expertise, such as Doxiadis' transfer of planning ideas from Greece to Africa and back, or the exchanges of economic models within the South,

632 A. Gupta. *Postcolonial Developments: Agriculture in the Making of Modern India*. Durham, London: Duke University Press, 1998, 34.

633 Aggregate (Group). Governing By Design: Architecture, Economy, And Politics In The Twentieth Century. (Pittsburgh, Pa: University of Pittsburgh Press, 2012), 24.

the Pan-African and Non-Aligned visions, challenge linear understandings of development ("from the west to the rest"). In doing so, this thesis introduces **transnational perspectives in the global histories** of modern architecture beyond the Cold War, while adding nuances to development histories. By exploring these exchanges also from the perspective of Africa, this thesis **expands the geographies of the scholarship on Doxiadis**, shifting attention beyond the emblematic projects in the Middle East, Southeast Asia and North America, while contributing to the **under-studied architectural history of postcolonial Africa**.

Given that the notion of *postcolonial Africa* expresses both a historical context and a critical perspective for this study, the following points underline why the analysis of the rural in postcolonial contexts broadens our understanding of Doxiadis Associates' spatial visions:

- By exploring Doxiadis Associates' encounter with the social, environmental and political dynamics of postcolonial Africa, this study illustrated links to intellectual shifts and scientific debates of the 1960s and 1970s. The problems of uncontrolled urbanization, the complexities of human-nature relations, and the impact of physical planning in social and ecological environments were contemplated by Doxiadis Associates in the field, and extensively discussed in the late 1960s in research projects in the firm's headquarters in Athens and at the Delos Symposia, thus informing Doxiadis conceptual thinking.

- The case of postcolonial Africa provides a perspective on Doxiadis' spatial visions for the rural, shedding light on the critical role of post-war transnational architecture networks in the shaping of development agendas for the non-industrialized world. Self-sustaining villages, 'modern' agrarian settlements, infrastructures of land and water access, low-cost, self-help housing and community building, were seen as primary vehicles for negotiating the spatial and social impact of modernization/development.

- In postcolonial Africa, the rural emerged as a repository of diverse cultural imaginaries; as a critical/contested field/geography that expressed and connected to the national and supra-national. It reflected Non-aligned political aspirations;

territorial visions of decolonization, national unity and the processes of nation-building; Cold War bipolarities; colonial legacies, decolonization processes and neo-colonial dependencies, aspirations of alternative development trajectories and land and production patterns; social dynamics and practices. Doxiadis Associates' multi-scale approach interacted with this complex socio-political condition, in providing a variety of spatial visions which manifested African countries' aspirations (for instance, networks of infrastructures communicated Pan-African and nation-building aspirations to transcend national boundaries and rural/urban divides through mobility and flows of people and goods).

The above parameters render postcolonial Africa a particularly appealing–yet largely under-studied–field of research that offers critical perspectives to further study the interactions between the rural in development and Doxiadis Associates' spatial visions. By highlighting the rural both as research hypothesis and a methodological tool, the thesis attempted to identify some conceptual threads, starting with Greece in the 1940s, subsequently moving to the Middle East and Southeast Asia in the 1950s and finally, focusing on postcolonial Africa in the 1960s and early 1970s. In fact, the study of Doxiadis Associates' spatial visions for the rural in development exposed a series of challenges for post-war development projects; as became clear from their efforts to implement the various development agendas.

The 1970s constituted a critical turning point in the contested histories of development. The gradual emergence of globalisation, the development of industrialisation and agricultural restructuring in the Global South, the increasing role of international development organisations, the decline of Cold War bipolarity; all contributed to the restructuring of the post-war development project. At the same time, Constantinos Doxiadis' passing in 1975 also signalled the reorganisation of Doxiadis Associates' diverse activities. In this context, future research may examine the continuation and evolution of threads that have been identified from this research, from the 1970s to the present. Following the structure of this final chapter, such threads could be:

- In relation to the "Rural in Ekistics and Ecumenopolis", connections between the early considerations of the Ekistics and the Ecumenopolis concepts with a series of

contested debates over the following decades on issues including environmental and social risk, ecological concerns, food supply etc.[634] Furthermore, the links of these concepts to the current "new genre of popular 'urbanology'" are worthy of study,[635]

- In relation to the "Shaping of rural landscapes in development", links between the relatively more flexible model/paradigm of spatial planning for shaping rural landscapes in development (self-help housing, infrastructures etc.), the neoliberal deregulation of spatial planning, and policies for integrating informality in the Global South. Moreover, connections to the neoliberal, privatized form of village and rural development that is currently spreading in the Global South could be explored[636] in connection to forms of current ruralisation processes in Africa.[637]

- In relation to "the rural in governmentality", links between the transfer of responsibilities from the state to local communities, due to lack of state capital and capacities — as examined especially in postcolonial Africa in relation to the neoliberal agenda of risk management[638] — would be of great interest.

In turn, by analysing Doxiadis Associates' concepts and planning projects through the perspective of the rural, this thesis gained critical insights into how architecture and planning responded to the complexities and challenges of the non-industrialized world during the development era, while exposing the threads of an emerging transnational planning culture and the crucial role of Doxiadis Associates in the development agendas for the Third World. The above-mentioned concerns, along with the findings of this thesis, further support the argument that the rural constitutes a privileging research perspective. This calls for further theoretical elaborations on Doxiadis Associates' spatial visions for postcolonial Africa and the rural in development.

634 See C. Doxiadis, and G. Dix. *Ecology and Ekistics*. London: Elek, 1977.
635 See B. Gleeson, 'Critical Commentary. The Urban Age: Paradox and Prospect.' *Urban Studies* 49, no. 5 (2012): 931-943.
636 J. Wilson, 'Model villages in the Neoliberal Era: the Millennium Development Goals and the Colonization of Everyday Life, *Journal of Peasant Studies*, 41:1, (2014), pp. 107-125,
637 See U. Chigbu, 'Rurality as a choice: Towards Ruralising Rural Areas in sub-Saharan African Countries." *Development Southern Africa* 30, no. 6 (2013), pp. 812-825; U. Chigbu 'Ruralisation: A Tool for Rural Transformation,' *Development in Practice*, 25:7, (2015), pp. 1067-1073.
638 See U. Beck,. *World at Risk* (Cambridge, Polity Press, 2008), p. 9.

Τα Χωρικά Οράματα του Γραφείου Δοξιάδη για τη Μετααποικιακή Αφρική
Το Αγροτικό σε Ανάπτυξη

Doxiadis Associates' Spatial Visions for Postcolonial Africa
The Rural in Development

Appendix A Images

Διδακτορική Διατριβή - Doctoral Thesis

Πέτρος ΦΩΚΑΪΔΗΣ αρχιτέκτονας ΕΜΠ

υπότροφος ΙΚΥ Κύπρου & ΕΛΚΕ/ΕΜΠ

Petros PHOKAIDES architect NTUA

Cyprus' State Scholarship Foundation & 'ELKE'/NTUA scholarship recipient

Αθήνα – Athens

2018

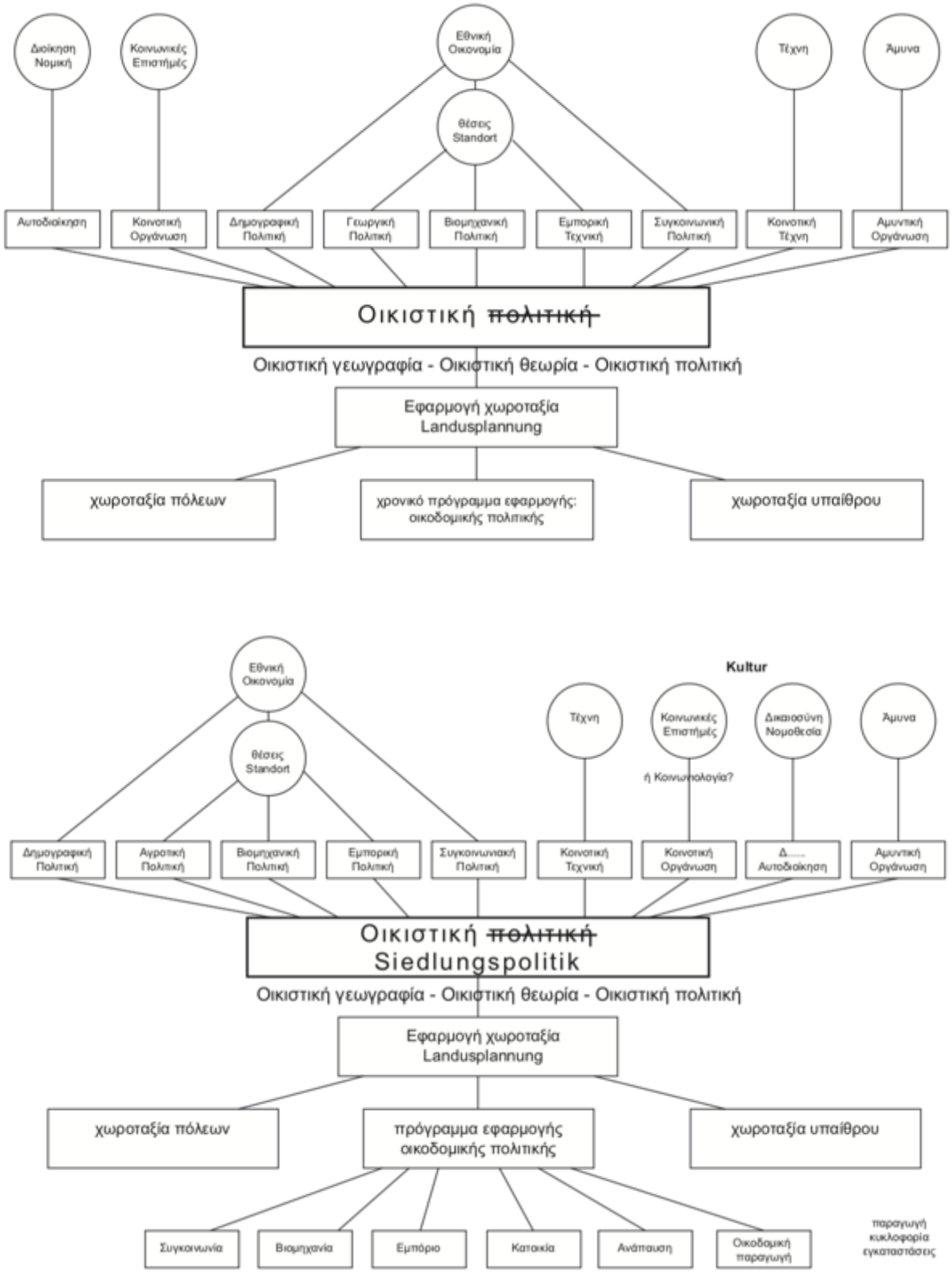


Figure 1.1
Ekistics diagrams by Doxiadis (redrawn by the author)

Source: Archive files 23735, Doxiadis Archives © Constantinos and Emma Doxiadis Foundation.

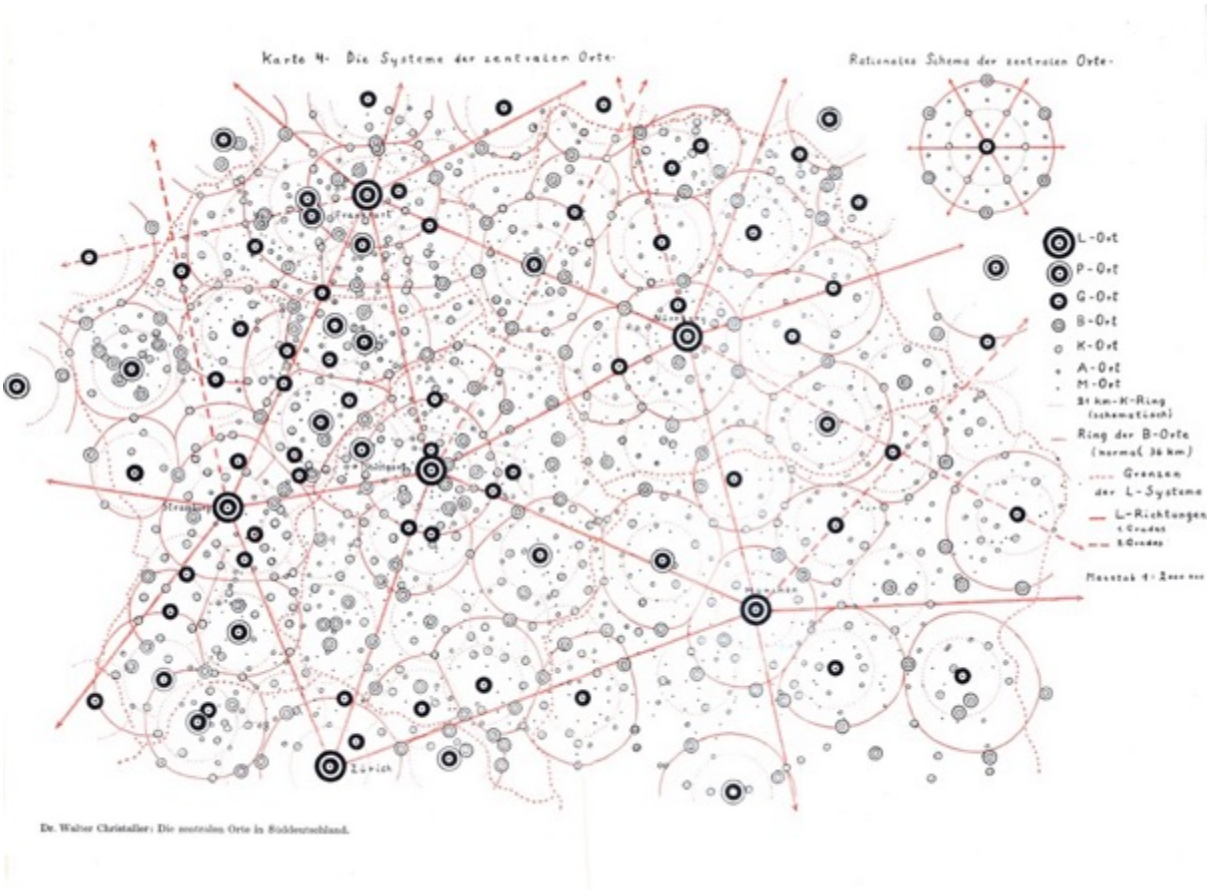


Figure 1.2
Christaller's map of central places in Southern Germany

Source: W. Christaller, *Die Zentralen Orte in Suddeutschland* (Jena: Gustav Fischer, 1933).

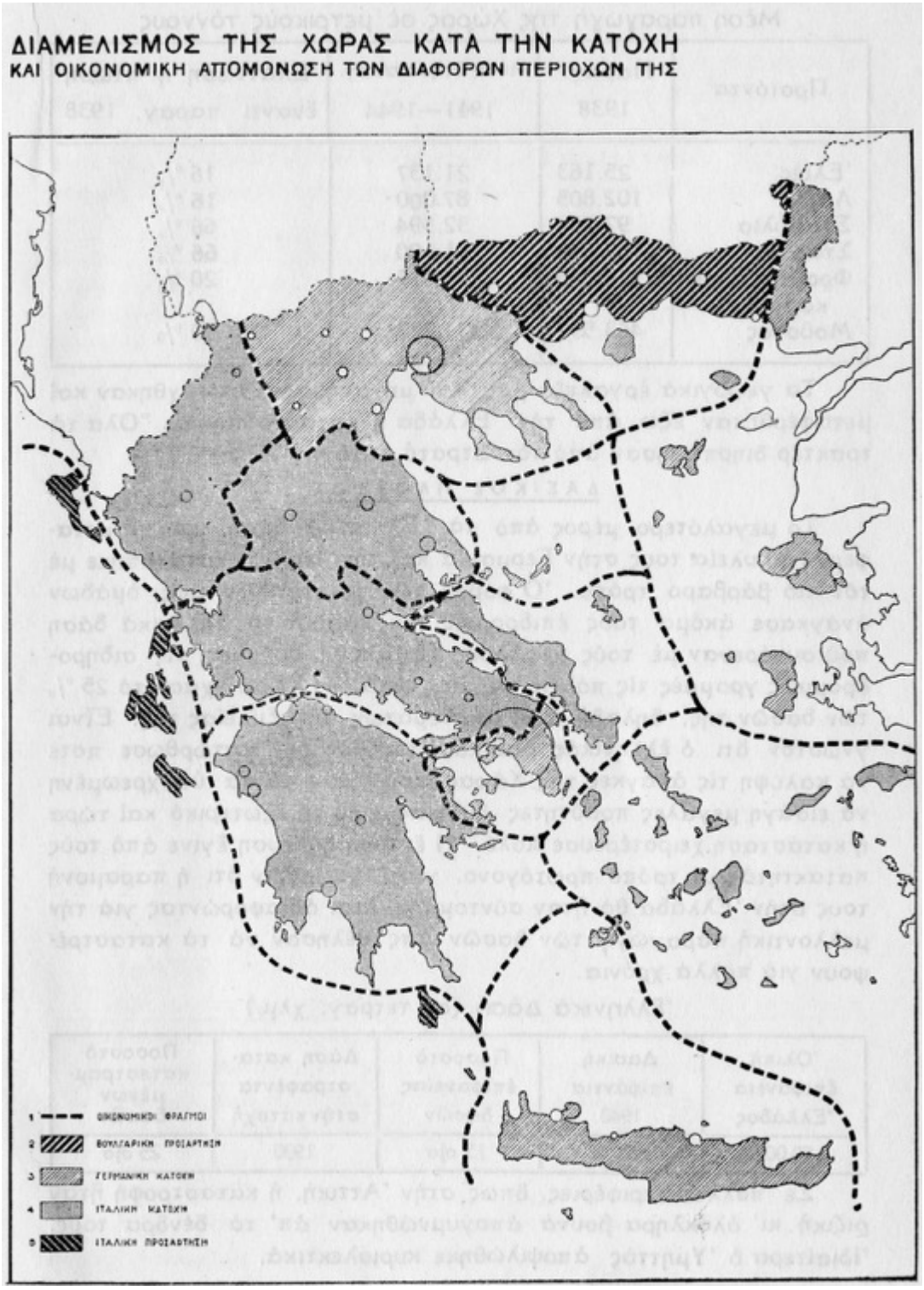


Figure 1.3
Map of Greece showing the country's divisions under different military rules

Source: C Doxiadis, *Οι Θυσίες της Ελλάδος στο Δεύτερο Παγκόσμιο Πόλεμο*
(The Sacrifices of Greece in the Second World War),
Series of Publications from the Undersecretary's Office for the Reconstruction 9, (Athens: 1954), p. 8.

Figure 1.4
Proposal for the administrative reorganization of the country by Doxiadis

Source: C. Doxiadis, Η Διοικητική Αναδιοργάνωση της Χώρας
[The Administrative Reorganization of the Country],
Series of Publications from the Undersecretary's Office for Reconstruction 13, (Athens: 1948), p. 86.

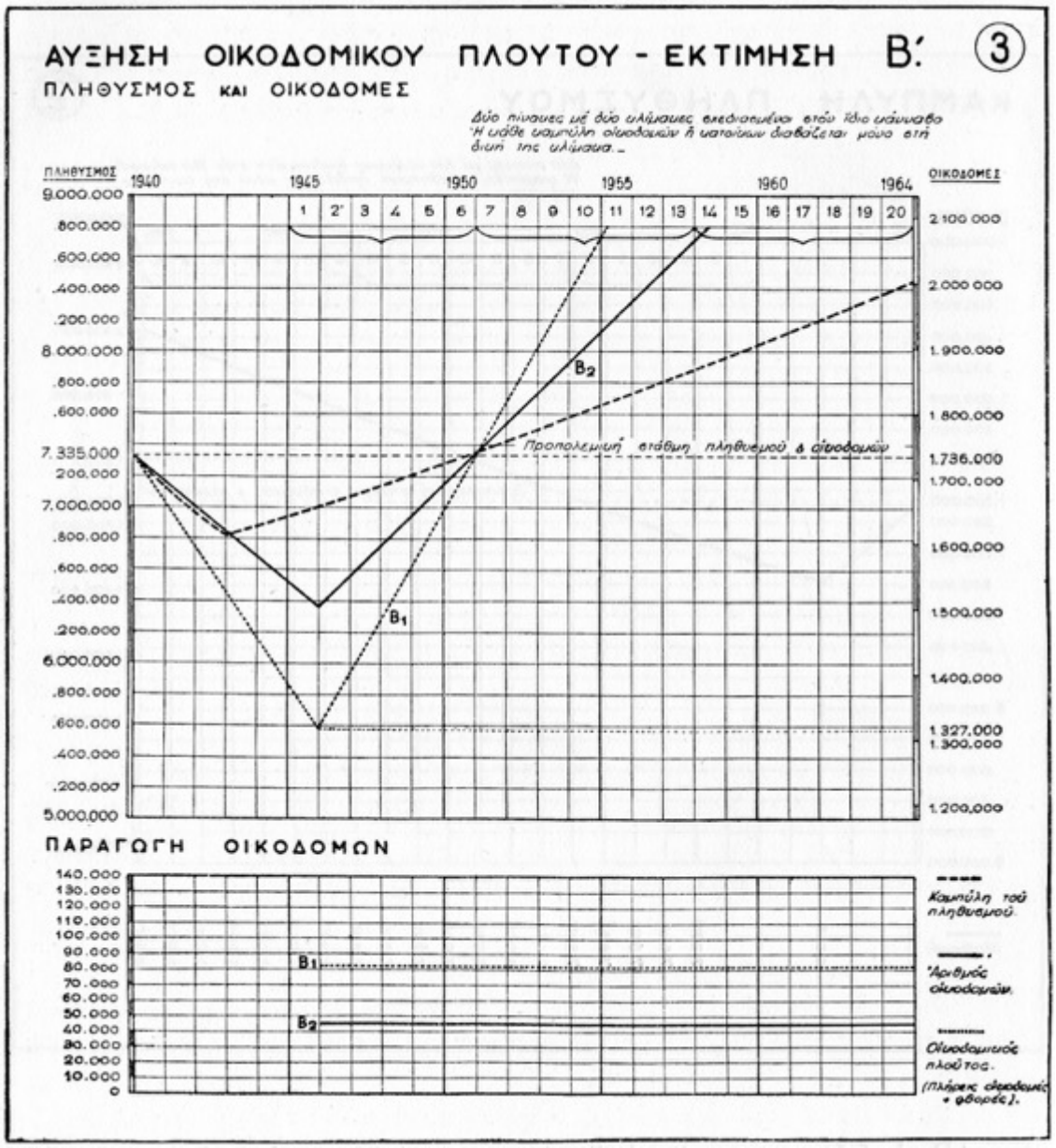


Figure 2.1
Population and housing statistics

Source: C. Doxiadis, *Οικιστική Πολιτική για την Ανοικοδόμηση της Χώρας με ένα Εικοσάχρονο Σχέδιο [Ekistic Policy for the Reconstruction of the Country on the Twenty- Year Program],*
(Athens: Undersecretary's Office for Reconstruction, 1947), p. 88.

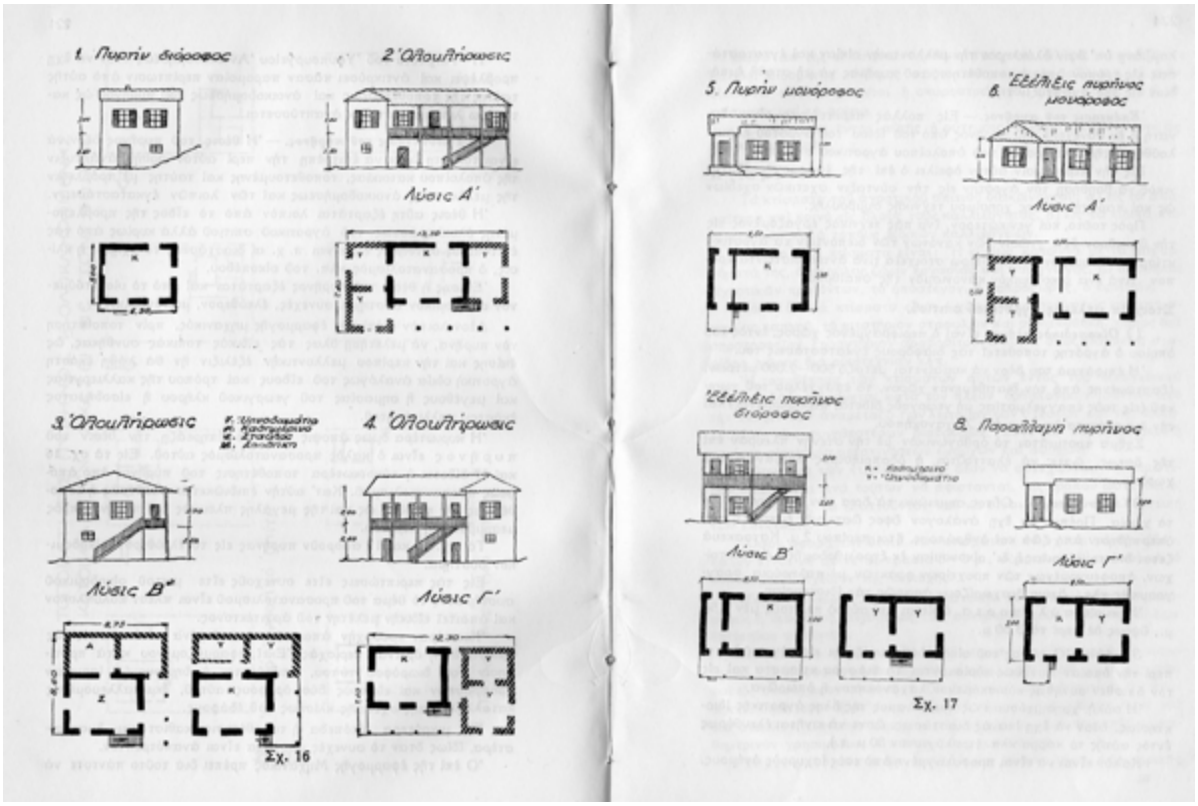


Figure 2.2
Typologies of housing 'cores'

Source: Undersecretary's Office for Reconstruction, *Διεύθυνσις Αγροτικών Κατασκευών, Πρόγραμμα και Κανονισμοί Έργων Ανοικοδομήσεως [Programme and Regulations for Reconstruction Projects],* (Athens: 1946), pp. 222-223.

Figure 2.3
Experiments with construction techniques testing the feasibility of concrete roof in low cost housing

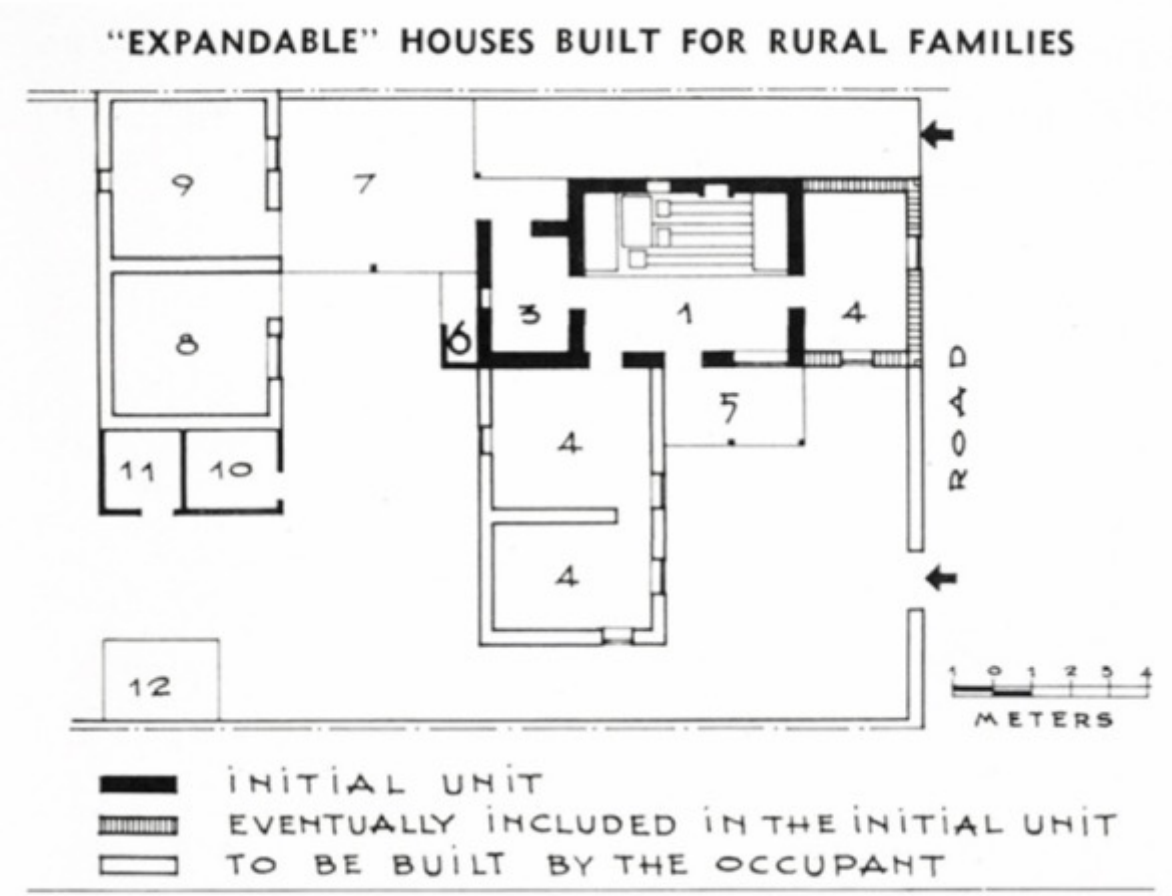
Source: *Το Πείραμα της Ροδοδάφνης [The Experiment of Rododafni],*
(Athens: Ministry for Reconstruction, 1950), p.93.

THE MONEY—

A local committee made up of civic leaders, the village priest, the mayor, and local engineers of the national housing ministry administer the funds available to individual home builders for the purchase of local materials and to employ the limited amount of skilled labor permitted for each dwelling.

Figure 2.4
Images from self-help housing projects in rural Greece

Source: G. Speer, "From Greek devastation have come new homes via 'aided self-help' (story of the rural village rebuilding program, since 1949.)" *Journal of Housing*, 10 (1953), p. 53.



The above rural "nuclei" unit that can be expanded as shown was designed for both family and livestock. The initial minimum area is outlined in solid black, the balance of the space to be added as the family recovers its economic strength. The numbered areas are: 1—living room; 3—kitchen; 4—bedroom; 5—porch; 6—toilet; 7—shed; 8—cowhouse; 9—granary; 10—chickenhouse; 11—pigsty; 12—manure heap.

Figure 2.5
The rural 'expansible' or 'expandable' house

Source: G. Speer, and G. Reed, "Unbeaten Greece Attacks its Housing Problem," *Journal of Housing*, 7, (1950), p. 99

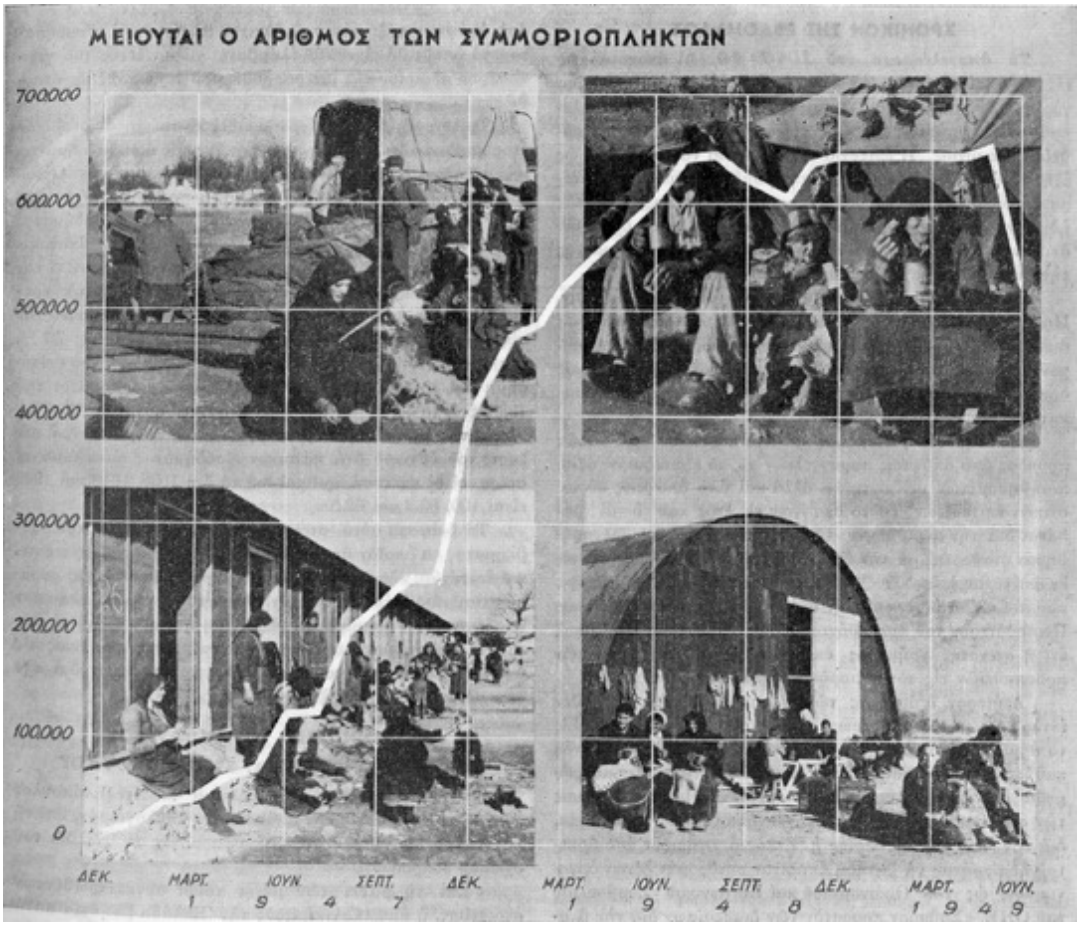


Figure 2.6
Statistics and images of the Civil War refugees published on the front page of the official of Greek Recovery Program Coordinating Office headed by Doxiadis

Source: *Αγών Επιβιώσης (Struggle for Survival)*, Weekly Bulletin
Ministry of Coordination, Greek Recovery Program Coordinating Office, 3, 45, (July 13, 1949).

Figure 2.7
Images of the new settlement Kerasovo, near Konitsa, Ioannina, which was relocated from the mountain to a public access road which was just constructed

Source: *Αγών Επιβιώσης (Struggle for Survival)*, Weekly Bulletin – Ministry of Coordination, Greek Recovery Program Coordinating Office, 1, 48, (August 3, 1949).

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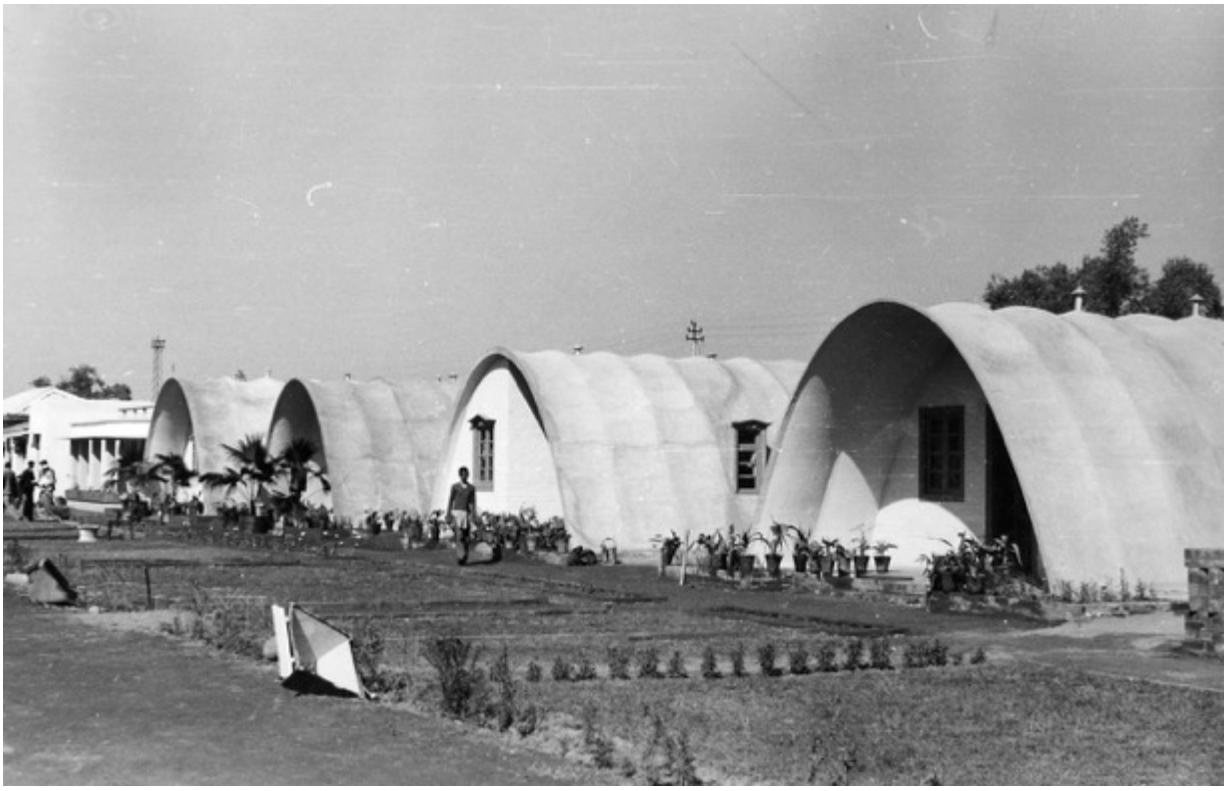

Figure 3.1
Prefabricated houses in the low-cost housing exhibition organised by J. Tyrwhitt in New Delhi, 1954

Source: Archive files 24970, Doxiadis Archives © Constantinos and Emma Doxiadis Foundation.

Figure 3.2
Participants of the 1954-UN Seminar visiting the irrigation project at Bhakra Nangal

Source: Archive files 24965, Doxiadis Archives © Constantinos and Emma Doxiadis Foundation.

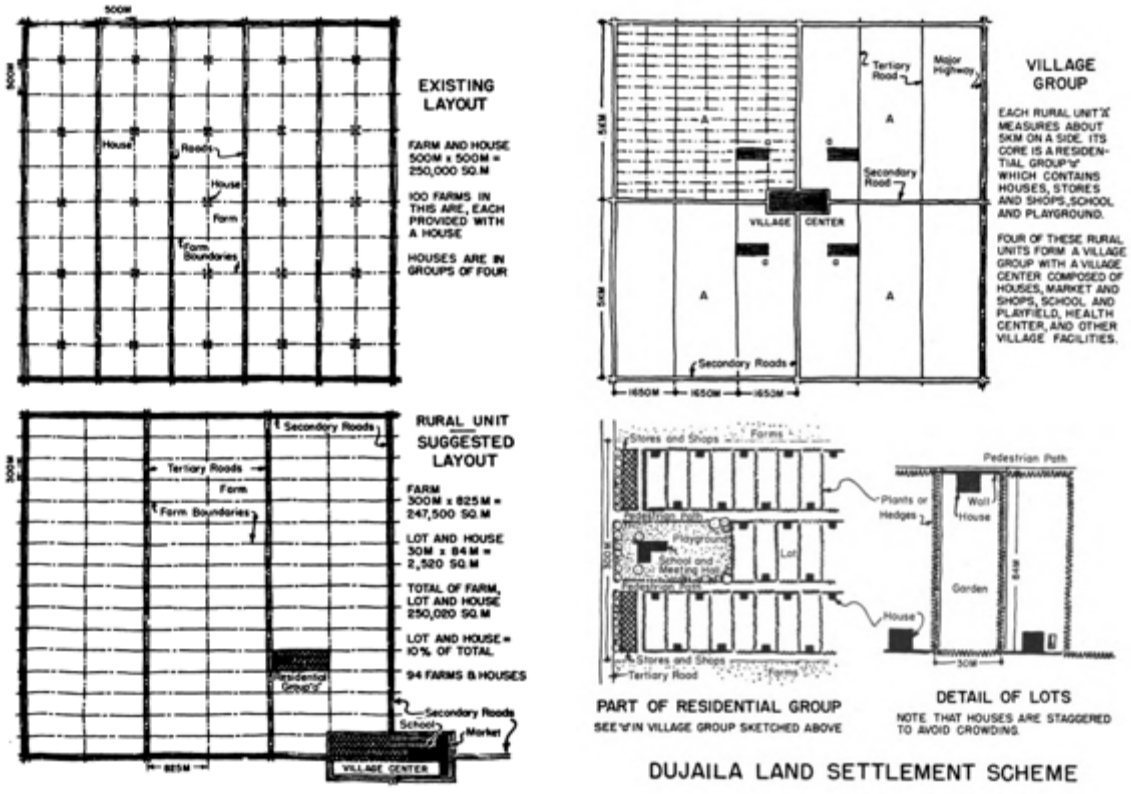

Figure 3.3
The Dujaila settlement scheme (left-up) and the revised proposal by IRBD's mission in Iraq in 1952

Source: IRBD. *The Economic Development of Iraq; Report of a Mission Organized by the International Bank for Reconstruction and Development at the Request of the Government of Iraq* (Baltimore, Johns Hopkins Press, 1952).

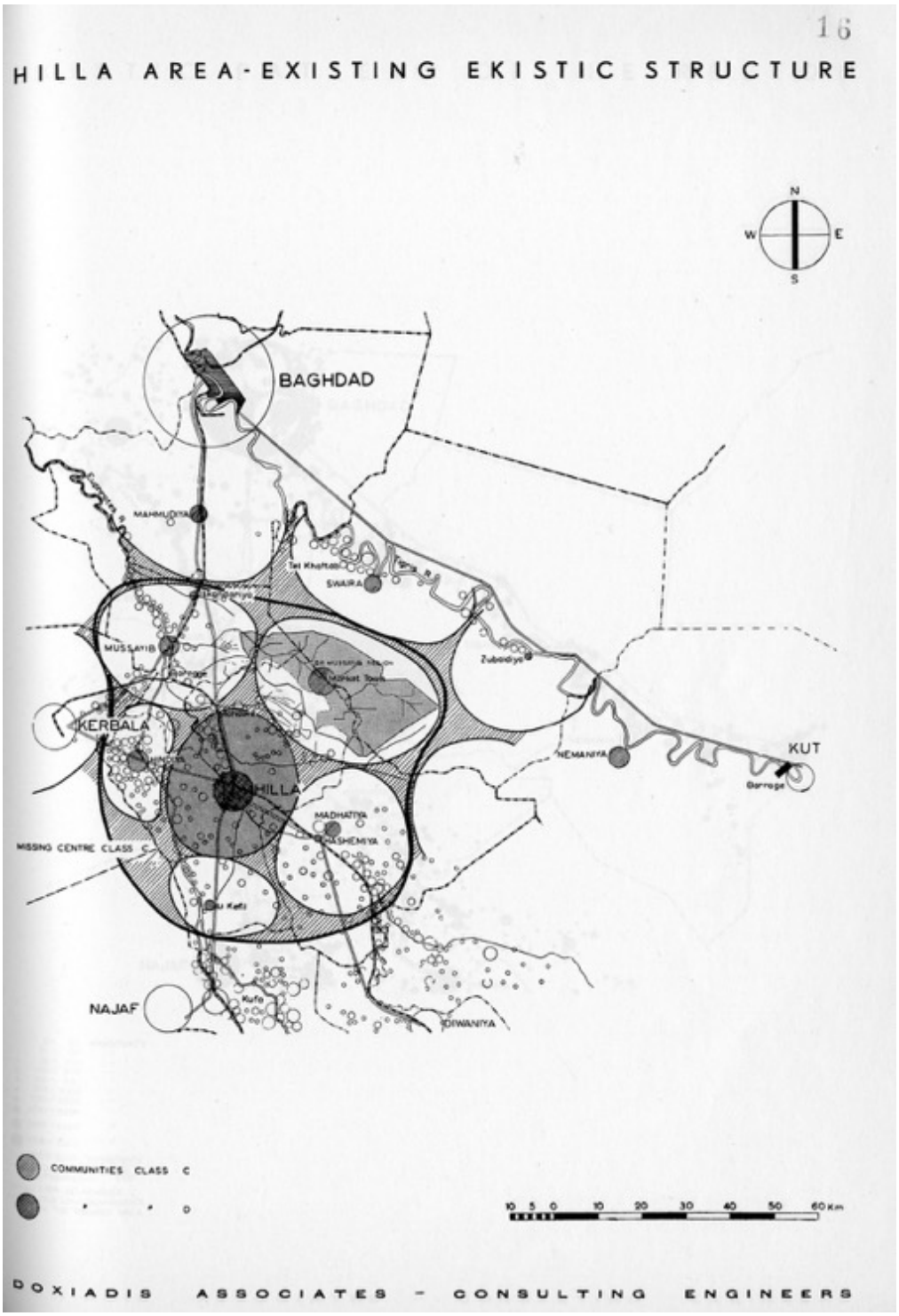

Figure 3.4
The proposed market town for the Greater Mussayib area seen as an extension of the existing "ekistic network"

Source: C. Doxiadis, *No More Regional Planning P.16 – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives, © Constantinos and Emma Doxiadis Foundation.

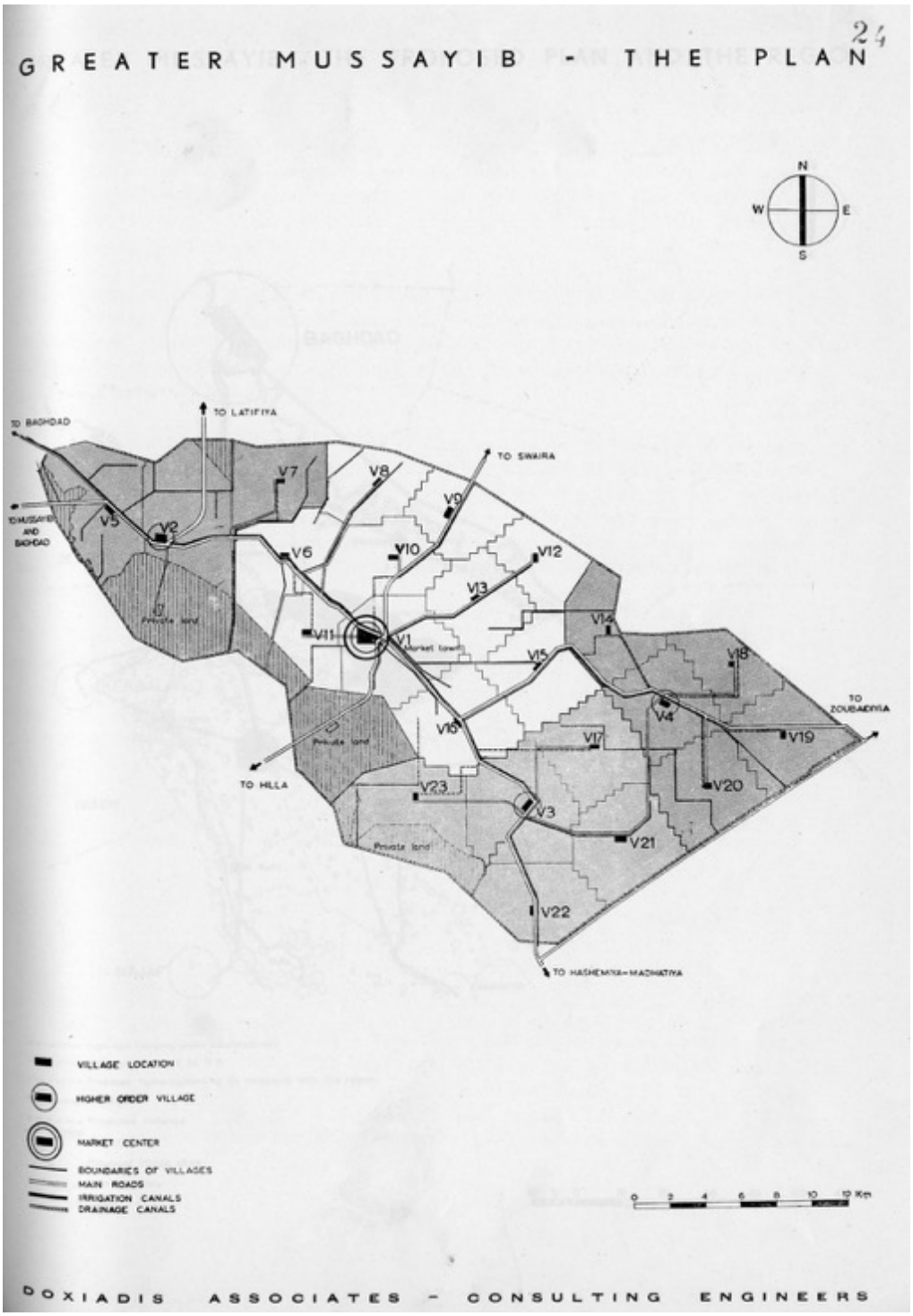

Figure 3.5
The master plan of the Greater Mussayib area incorporating land division, irrigation projects and settlement planning

Source: C. Doxiadis, *No More Regional Planning – A Move Towards Regional Development Programmes*, Paper for Discussion at the United Nations Seminar, on Regional Planning in South East Asia, Tokyo, 1958, Archive files 2509, Doxiadis Archives, © Constantinos and Emma Doxiadis Foundation.

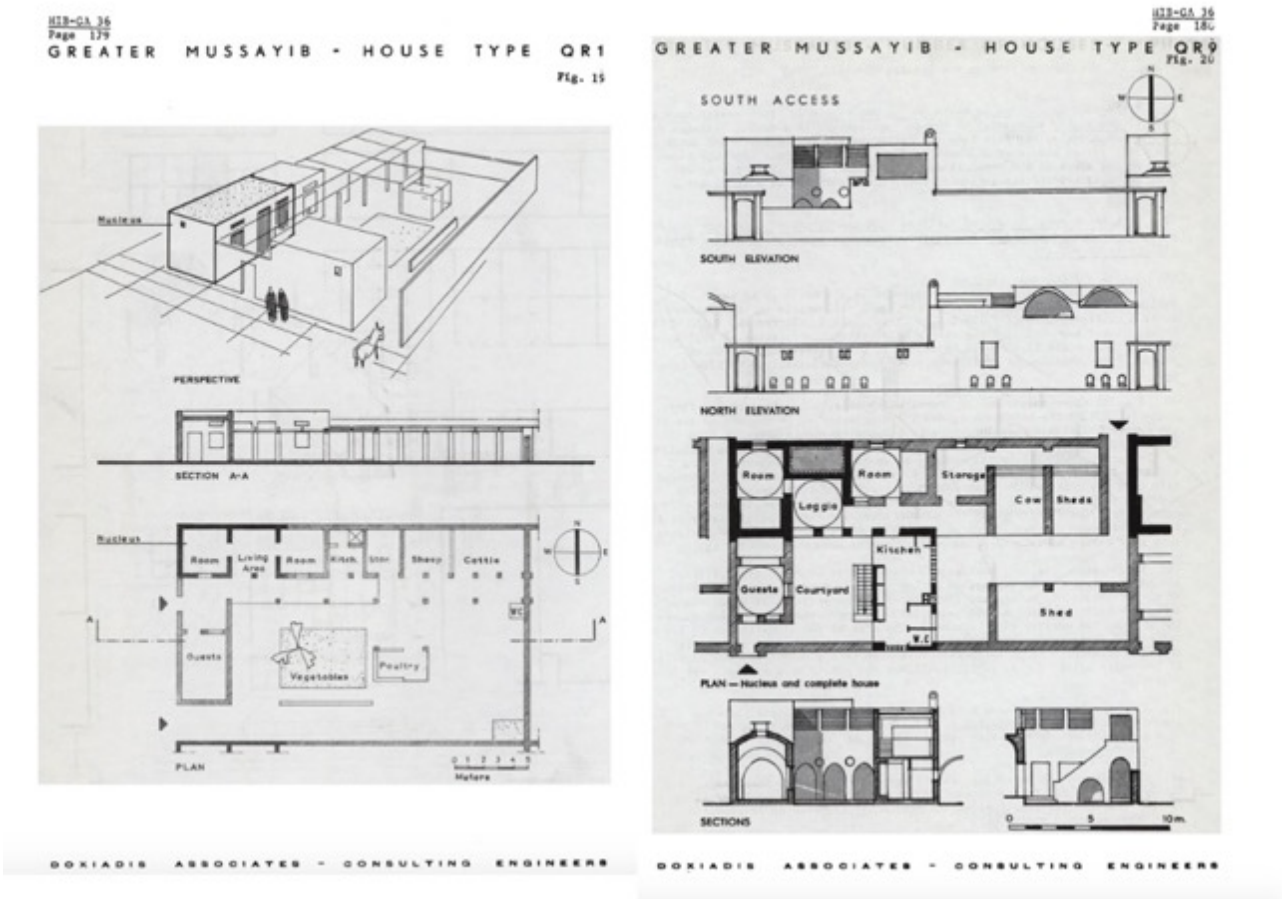

Figure 3.6
Comparison of house types proposed in the same study

Source: Doxiadis Associates, 'A Regional Development Program for Greater Mussayib, Iraq, 1958,' *Ekistics,* 6, no.36 (October 1958): 179-180.

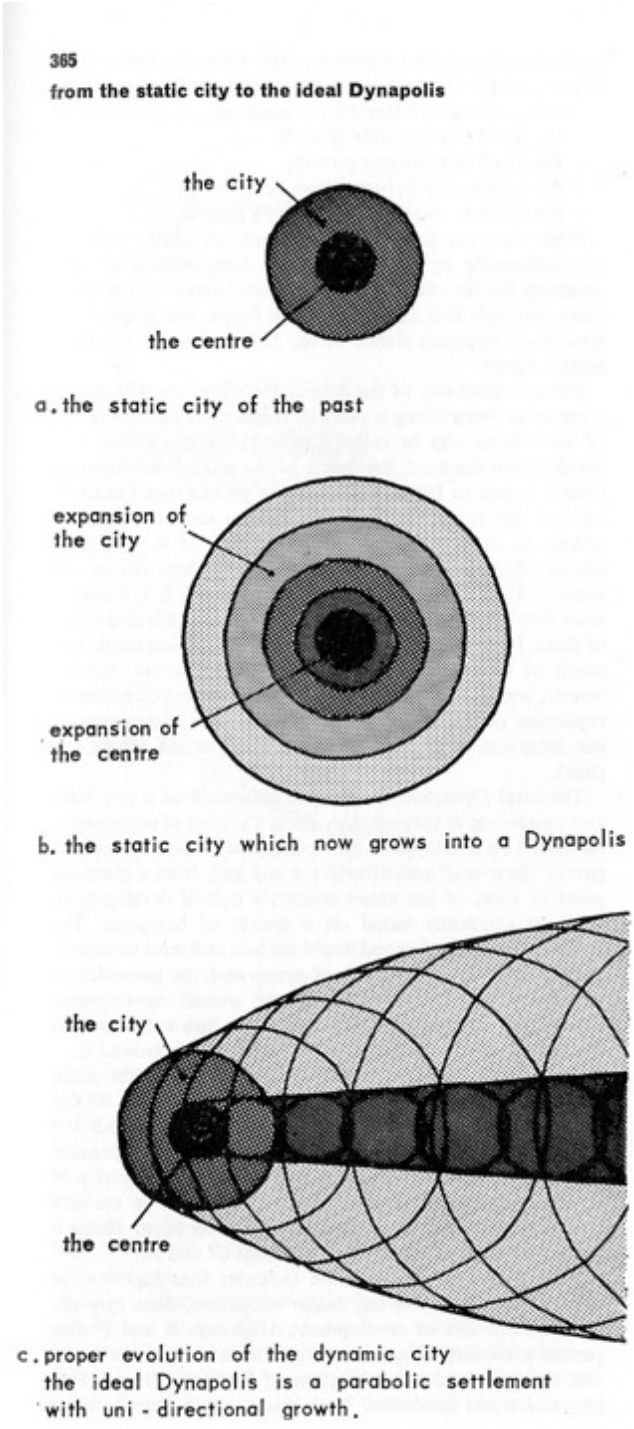

Figure 4.1
Diagrams of "Dynapolis"

Source: C. A. Doxiadis, *Ekistics: An Introduction to the Science of Human Settlements* (London, Hutchinson, 1968), p.365.

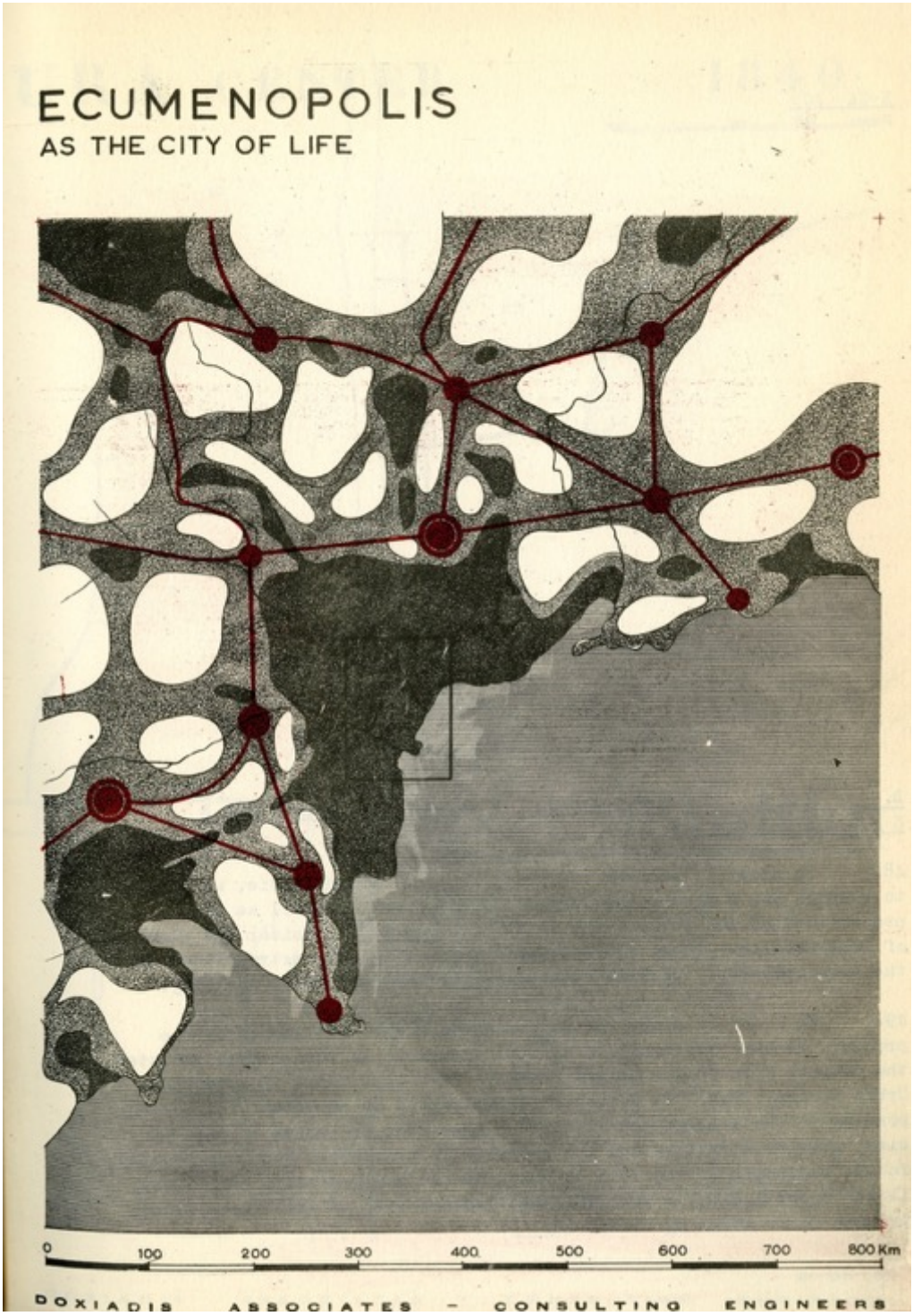

Figure 4.2
Early diagrams of Ecumenopolis

Source: *Ecumenopolis: Towards a Universal Settlement*, June 1963,
Archive files 2666, Doxiadis Archives, © Constantinos and Emma Doxiadis Foundation.

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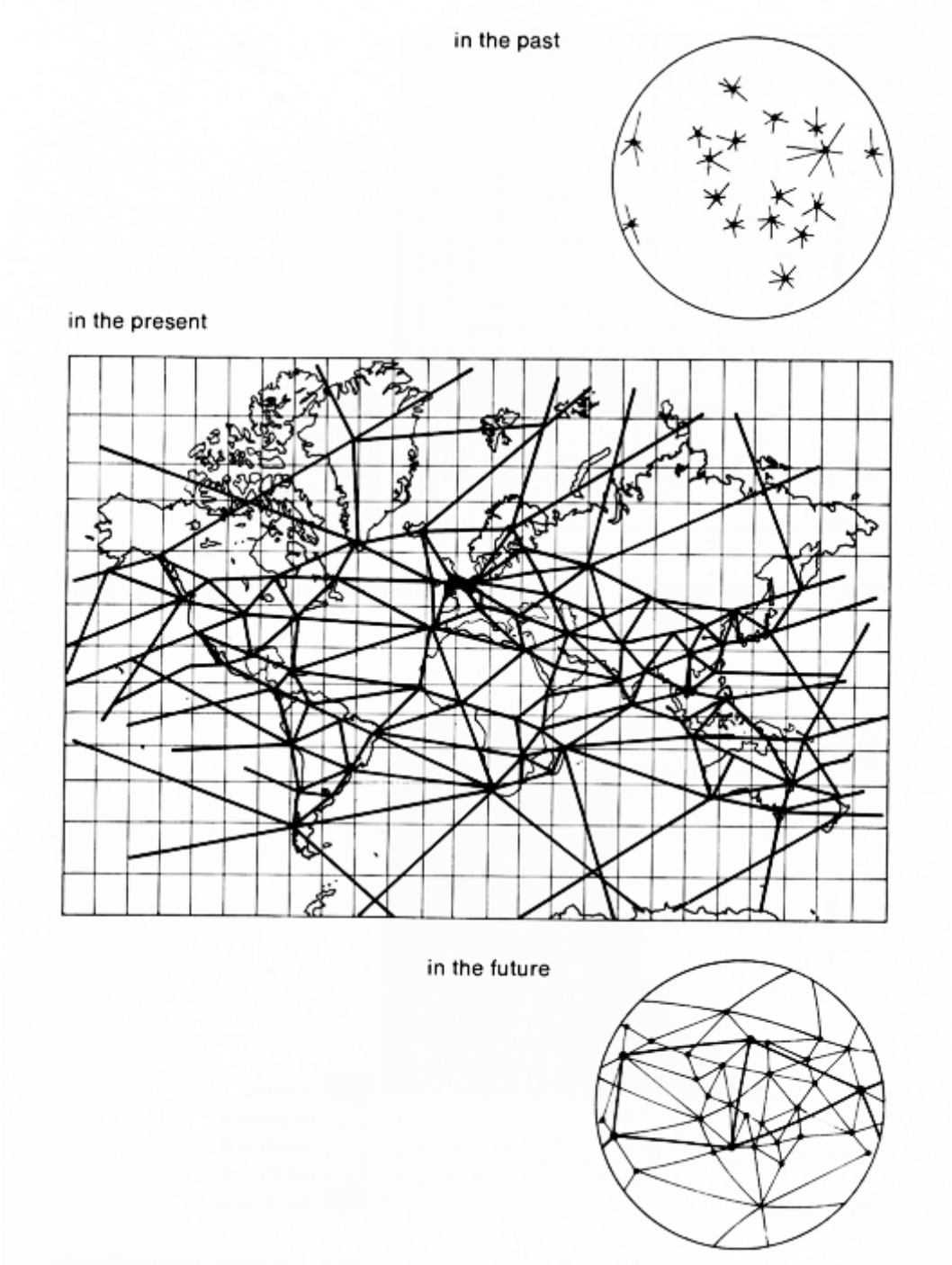


Figure 4.3
Conceptual sketch of global networks

Source: C. Doxiadis and J Papaioannou, *Ecumenopolis: The Inevitable City of the Future*, (New York: Norton and Company, 1974), p.347.

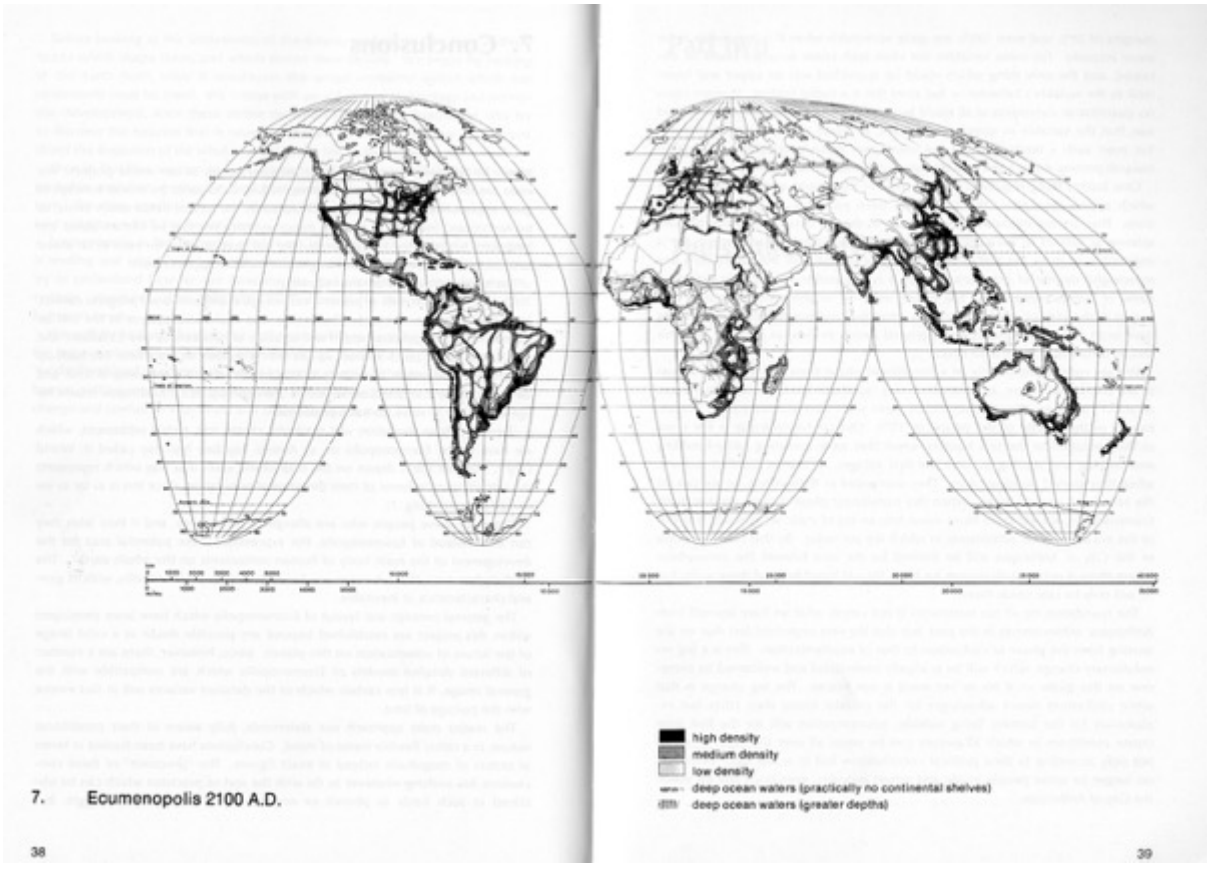


Figure 4.4
Ecumenopolis planetary footprint

Source: C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future*, (New York: Norton and Company, 1974), pp. 38-39.

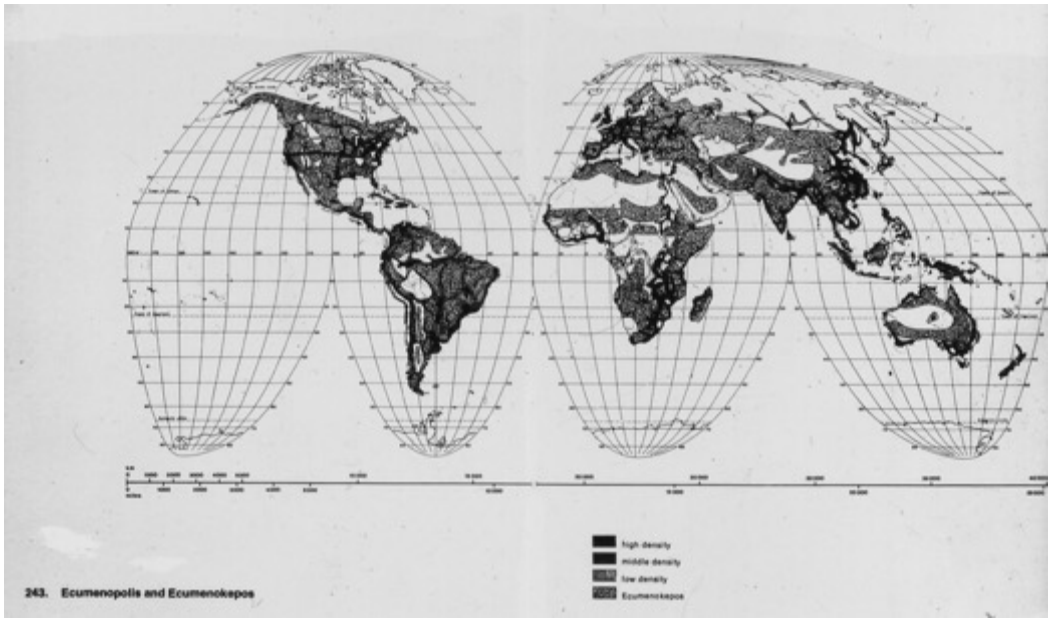


Figure 4.5
Ecumenopolis and Ecumenokepos

Source: Archive files 13863, Doxiadis Archives**,** © Constantinos and Emma Doxiadis Foundation.

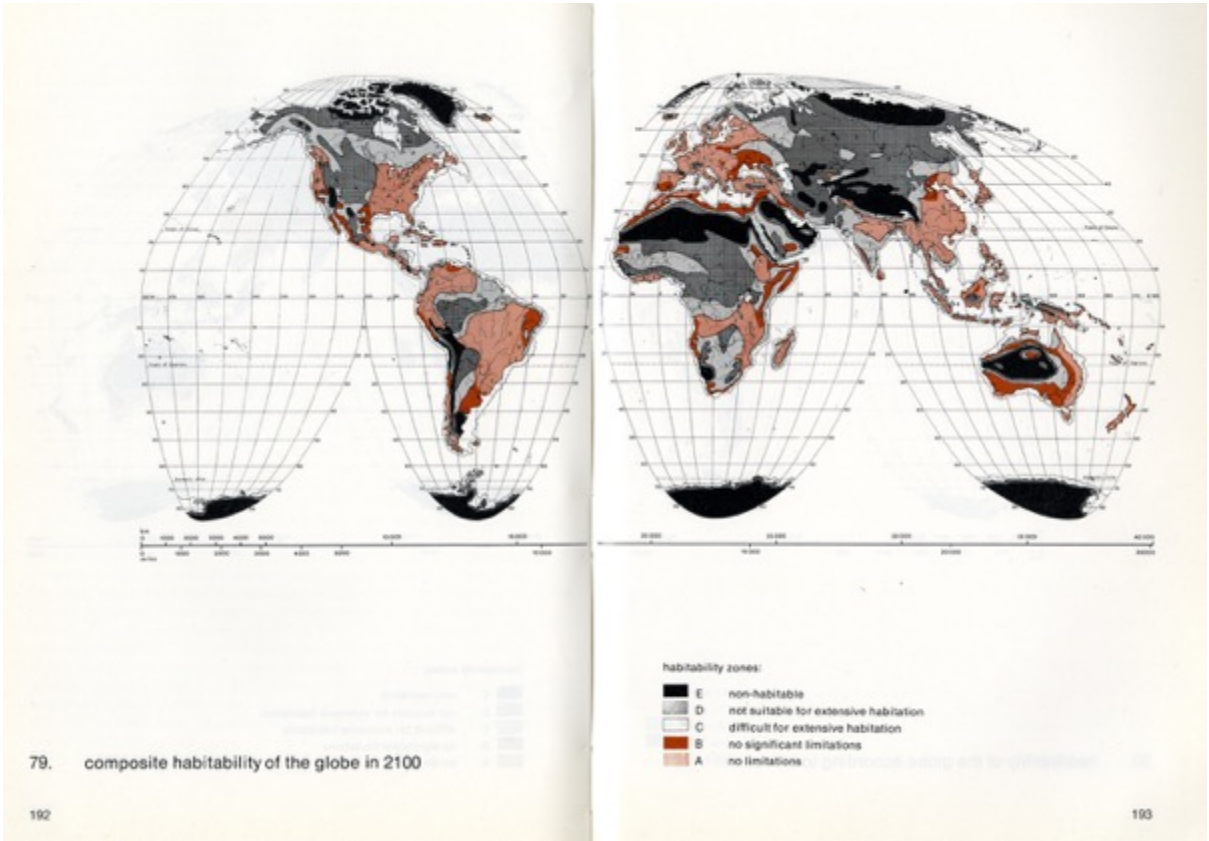


Figure 4.6
Global map of composite habitability

Source: C. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future*, (New York: Norton and Company, 1974), pp. 192-193.

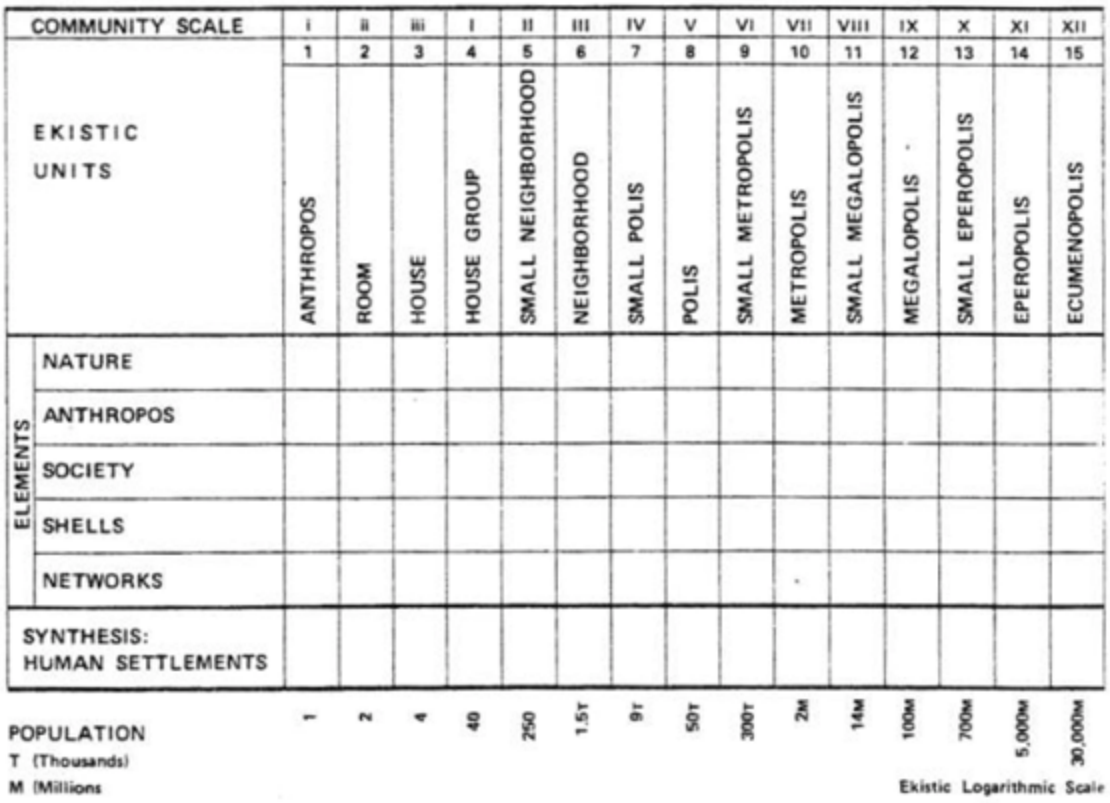
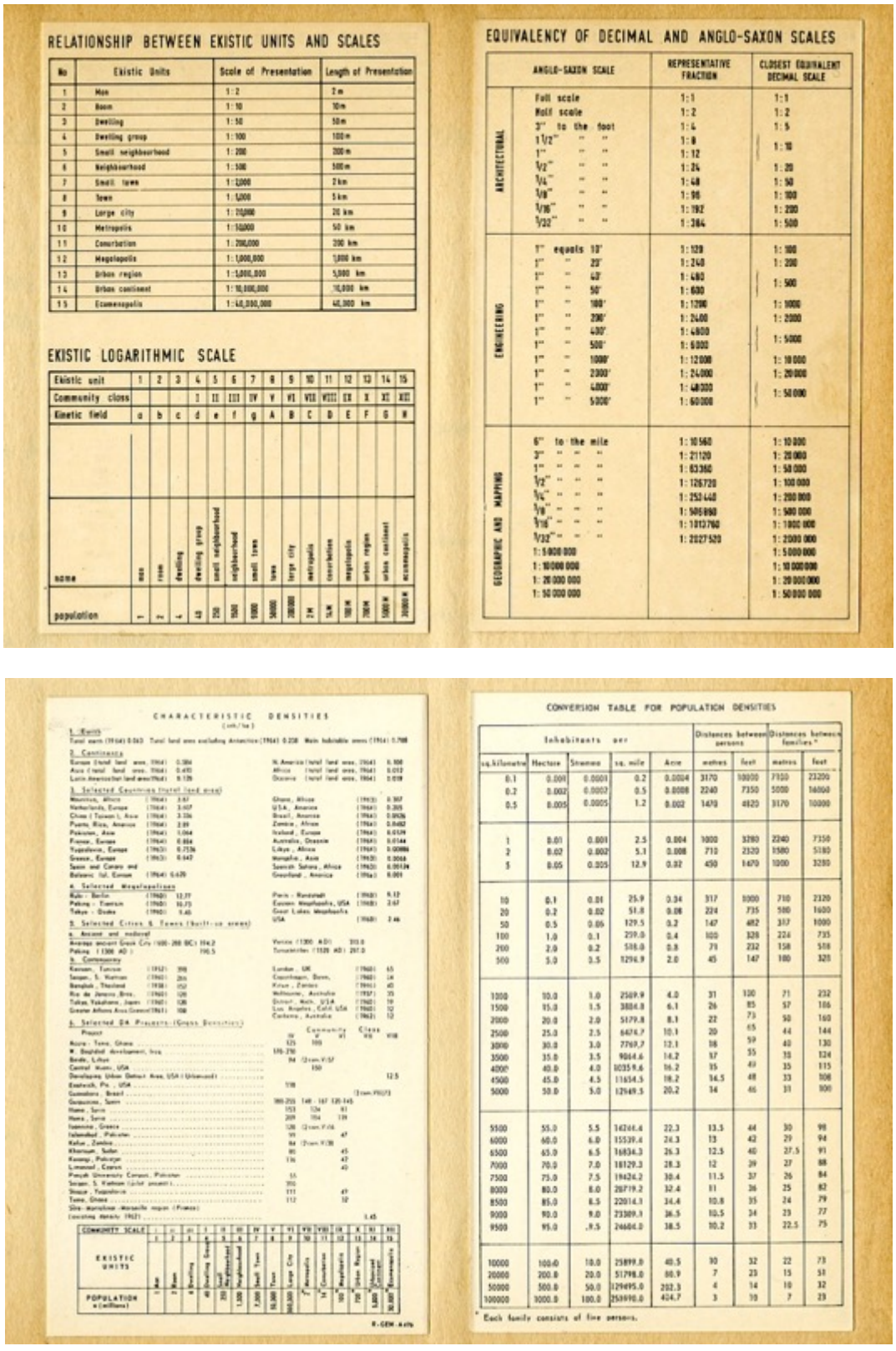


Figure 4.7
Ekistics Logarithmic Scale

Source: J. Tyrwhitt, "Background to Ekistics", *Ekistics*, 45, 266 (1978), p.15.



RELATIONSHIP BETWEEN EKISTIC UNITS AND SCALES

No	Ekistic Units	Scale of Presentation	Length of Presentation
1	Man	1 : 2	2 m
2	Room	1 : 10	10m
3	Dwelling	1 : 50	50m
4	Dwelling group	1 : 100	100 m
5	Small neighbourhood	1 : 200	200 m
6	Neighbourhood	1 : 500	500 m
7	Small town	1 : 2,000	2 km
8	Town	1 : 5,000	5 km
9	Large city	1 : 10,000	20 km
10	Metropolis	1 : 50,000	50 km
11	Conurbation	1 : 200,000	200 km
12	Megalopolis	1 : 1,000,000	1,000 km
13	Urban region	1 : 5,000,000	5,000 km
14	Urban continent	1 : 10,000,000	10,000 km
15	Ecumenopolis	1 : 40,000,000	40,000 km

EKISTIC LOGARITHMIC SCALE

Ekistic unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Community class				I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Kinetic field	a	b	c	d	e	f	g	A	B	C	D	E	F	G	H
name	man	room	dwelling	dwelling group	small neighbourhood	neighbourhood	small town	town	large city	metropolis	conurbation	megalopolis	urban region	urban continent	ecumenopolis
population	1	4	6	40	250	1500	9000	54000	324000	2M	14M	100M	700M	5000M	35000M

EQUIVALENCY OF DECIMAL AND ANGLO-SAXON SCALES

	ANGLO-SAXON SCALE	REPRESENTATIVE FRACTION	CLOSEST EQUIVALENT DECIMAL SCALE
ARCHITECTURAL	Full scale	1:1	1:1
	Half scale	1:2	1:2
	3" to the foot	1:4	1:5
	1 1/2" " "	1:8	1:10
	1" " "	1:12	
	1/2" " "	1:24	1:20
	1/4" " "	1:48	1:50
	1/8" " "	1:96	1:100
	1/16" " "	1:192	1:200
	1/32" " "	1:384	1:500
ENGINEERING	1" equals 10'	1:120	1:100
	1" " 20'	1:240	1:200
	1" " 40'	1:480	1:500
	1" " 50'	1:600	
	1" " 100'	1:1200	1:1000
	1" " 200'	1:2400	1:2000
	1" " 400'	1:4800	1:5000
	1" " 500'	1:6000	
	1" " 1000'	1:12000	1:10000
	1" " 2000'	1:24000	1:20000
	1" " 4000'	1:48000	1:50000
	1" " 5000'	1:60000	
GEOGRAPHIC AND MAPPING	6" to the mile	1:10560	1:10000
	3" " " "	1:21120	1:20000
	1" " " "	1:63360	1:50000
	1/2" " " "	1:126720	1:100000
	1/4" " " "	1:253440	1:250000
	1/8" " " "	1:506880	1:500000
	1/16" " " "	1:1013760	1:1000000
	1/32" " " "	1:2027520	1:2000000
	1:5000000		1:5000000
	1:10000000		1:10000000
	1:20000000		1:20000000
	1:50000000		1:50000000

CHARACTERISTIC DENSITIES

CONVERSION TABLE FOR POPULATION DENSITIES

Inhabitants per					Distances between persons		Distances between families *	
sq.kilometre	Hectare	Stremma	sq. mile	Acre	metres	feet	metres	feet
0.1	0.001	0.0001	0.2	0.0004	3170	10000	7150	23200
0.2	0.002	0.0002	0.5	0.0008	2240	7350	5050	16500
0.5	0.005	0.0005	1.2	0.002	1470	4820	3170	10000
1	0.01	0.001	2.5	0.004	1000	3280	2240	7350
2	0.02	0.002	5.1	0.008	710	2320	1580	5180
5	0.05	0.005	12.9	0.02	450	1470	1000	3280
10	0.1	0.01	25.9	0.04	317	1000	710	2320
20	0.2	0.02	51.8	0.08	224	735	500	1600
50	0.5	0.05	129.5	0.2	147	482	317	1000
100	1.0	0.1	259.0	0.4	100	328	224	735
200	2.0	0.2	518.0	0.8	71	232	158	518
500	5.0	0.5	1296.9	2.0	45	147	100	328
1000	10.0	1.0	2589.9	4.0	31	100	71	232
1500	15.0	1.5	3884.8	6.1	26	85	57	186
2000	20.0	2.0	5179.8	8.1	22	73	50	160
2500	25.0	2.5	6474.7	10.1	20	65	44	144
3000	30.0	3.0	7769.7	12.1	18	59	40	130
3500	35.0	3.5	9064.6	14.2	17	55	38	124
4000	40.0	4.0	10359.6	16.2	15	49	35	115
4500	45.0	4.5	11654.5	18.2	14.5	48	33	108
5000	50.0	5.0	12949.5	20.2	14	46	31	100
5500	55.0	5.5	14244.4	22.3	13.5	44	30	98
6000	60.0	6.0	15539.4	24.3	13	42	29	94
6500	65.0	6.5	16834.3	26.3	12.5	40	27.5	91
7000	70.0	7.0	18129.3	28.3	12	39	27	88
7500	75.0	7.5	19424.2	30.4	11.5	37	26	84
8000	80.0	8.0	20719.2	32.4	11	36	25	82
8500	85.0	8.5	22014.1	34.4	10.8	35	24	79
9000	90.0	9.0	23309.1	36.5	10.5	34	23	77
9500	95.0	9.5	24604.0	38.5	10.2	33	22.5	75
10000	100.0	10.0	25899.0	40.5	10	32	22	73
20000	200.0	20.0	51798.0	80.9	7	23	15	51
50000	500.0	50.0	129495.0	202.3	4	14	10	32
100000	1000.0	100.0	258990.0	404.7	3	10	7	23

* Each family consists of five persons.

Figure 4.8
Ekistics pocket cards, 1969

Source: Archive files 25047, Doxiadis Archives © Constantinos and Emma Doxiadis Foundation.

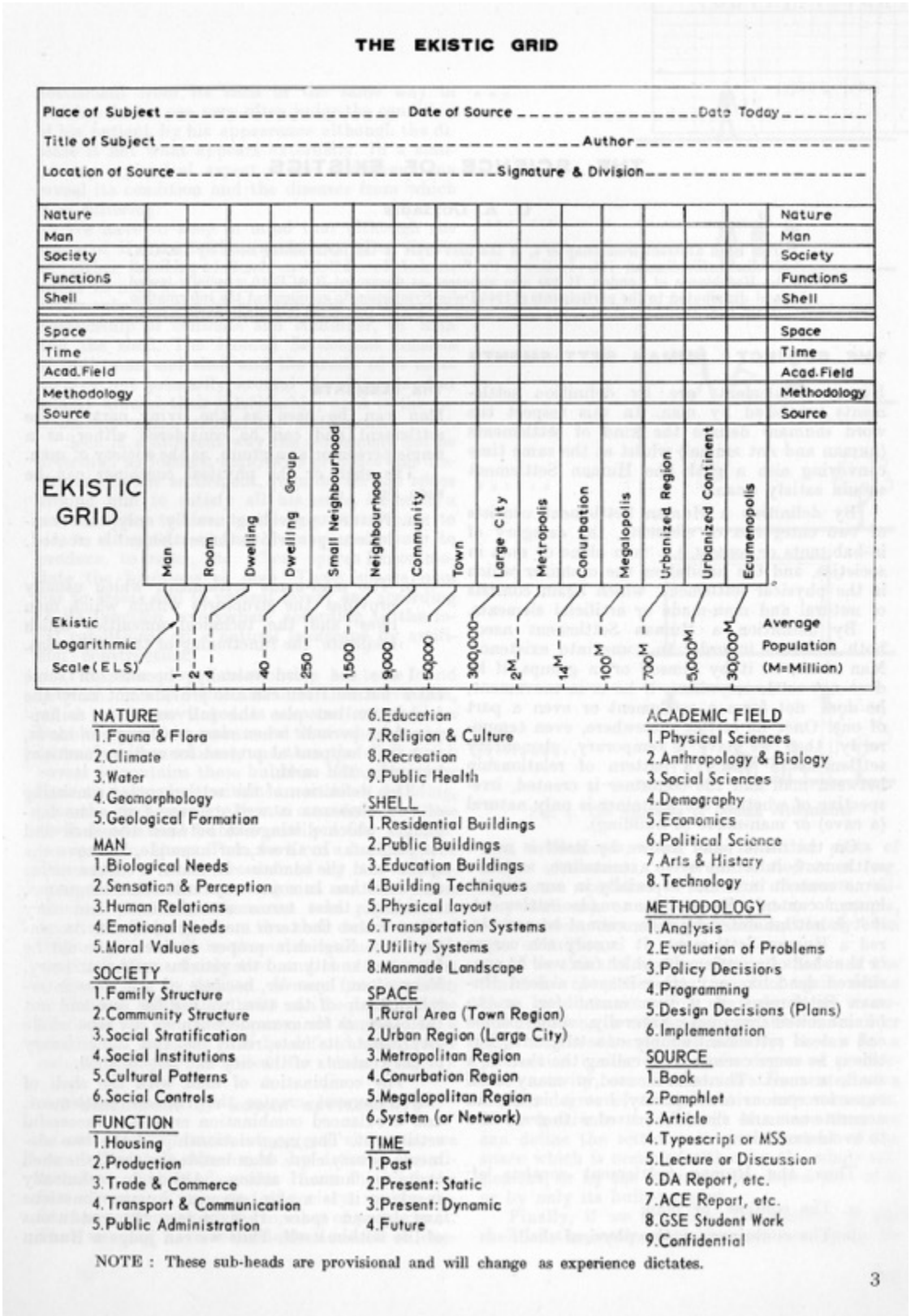


Figure 4.9
Ekistics Grid 1965

Source: "The Ekistic Grid", *Ekistics,* 19, 110 (January 1965), p. 3.

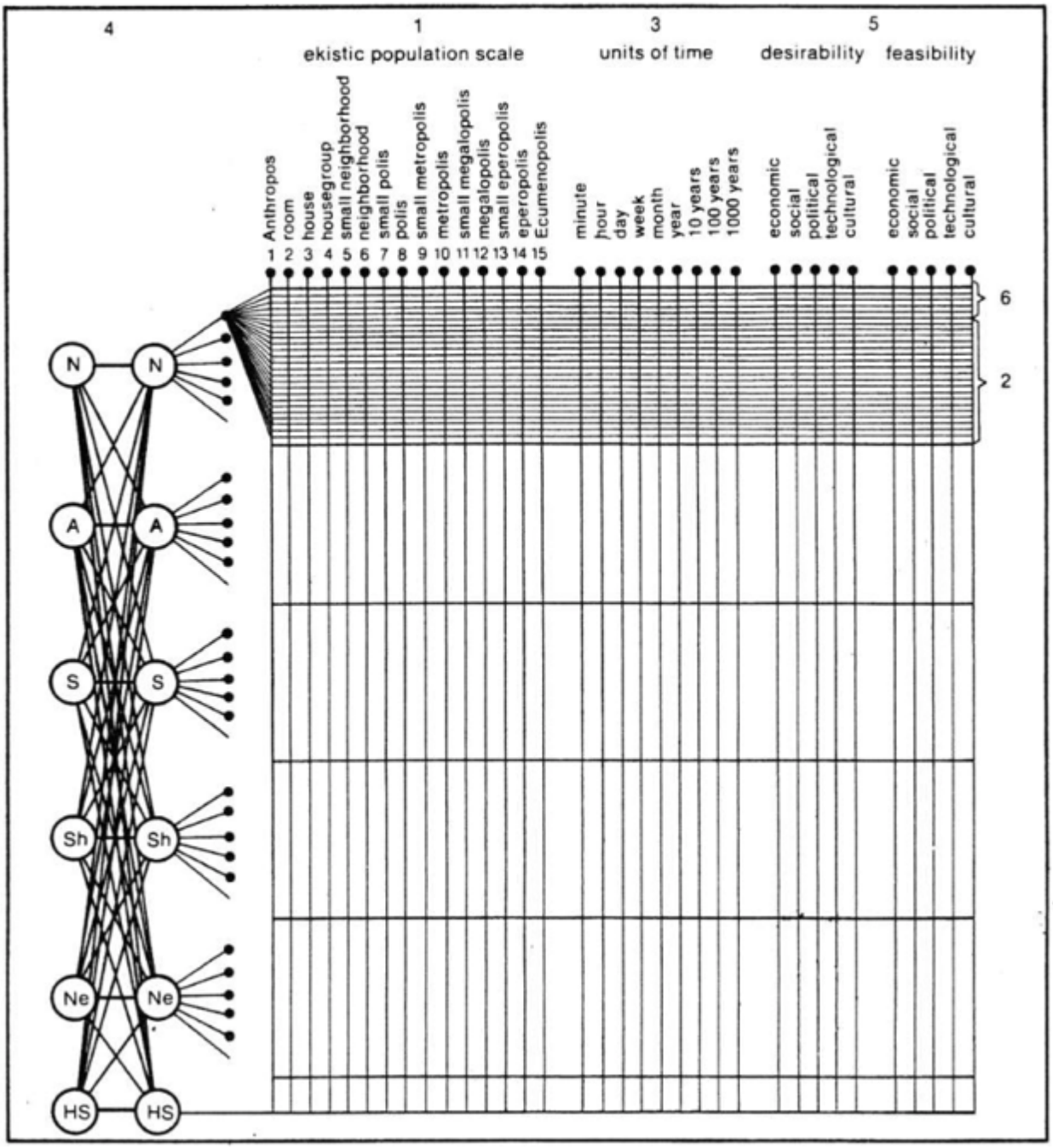


Figure 4.10
The anthropocosmos model. N(ature) - Ne(tworks) – S(hells) – N(ature) – A(nthropos).

Source: J. Tyrwhitt, "Background to Ekistics", *Ekistics*, 40, 241, (December 1975).

Figure 5.1
In one of his few visits in Zambia, Constantinos Doxiadis walks together with key Government officials (P.M Muyangwa and V.S Musakanya followed by two of the firm's vice presidents (A Symeou and A Tsitsis), and the local representative in Lusaka (D.Soteriou), 3 March 1968.

Source: Archive files 21064, Doxiadis Archives © Constantinos and Emma Doxiadis Foundation.

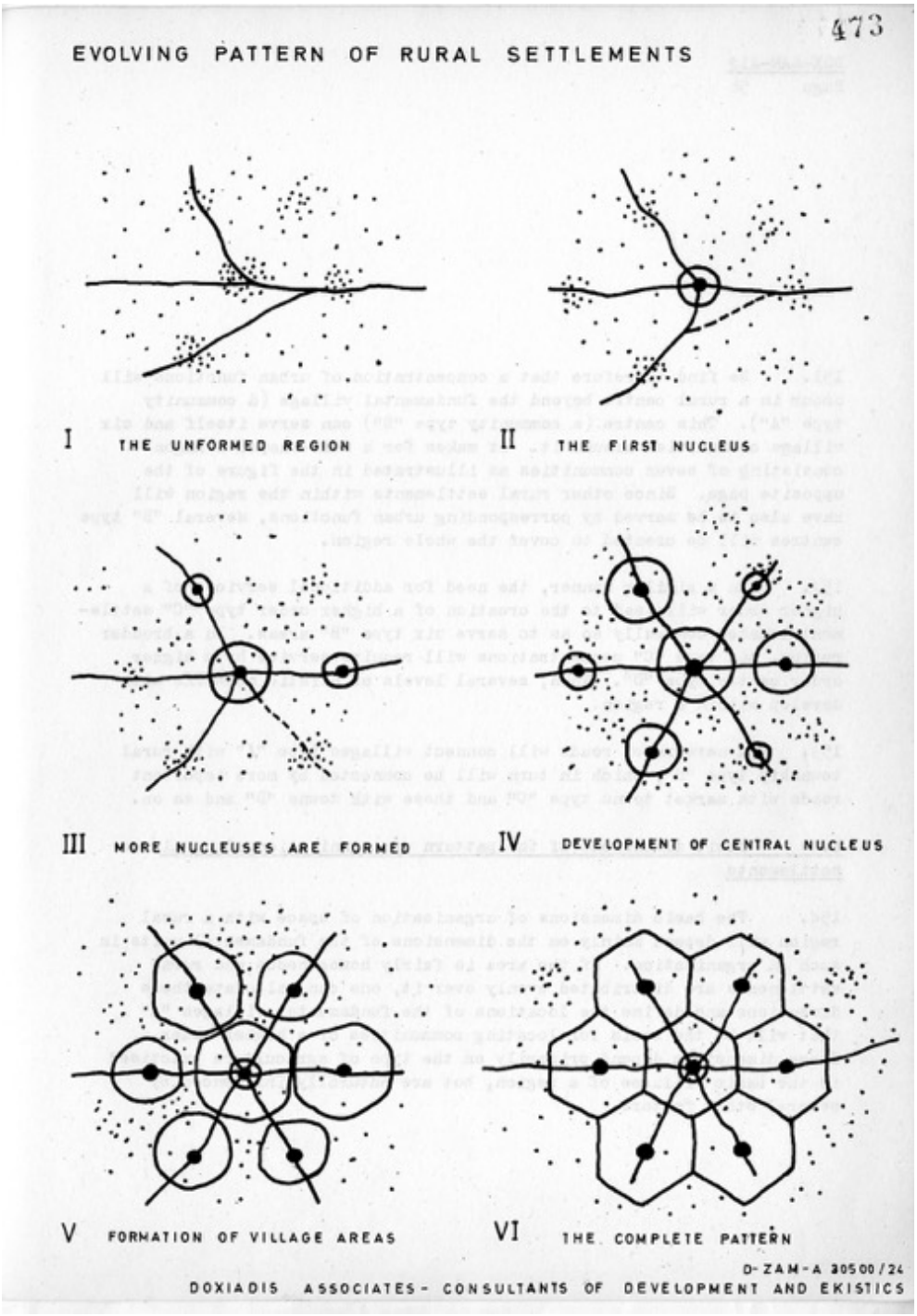


Figure 5.2
Diagram of the 'evolving' process of rural settlement patterns.

Source: 'Rural Townships of Zambia – General Report, 15 'December 1967.
Archive files 24657, Doxiadis Archives © Constantinos and Emma Doxiadis Foundation.

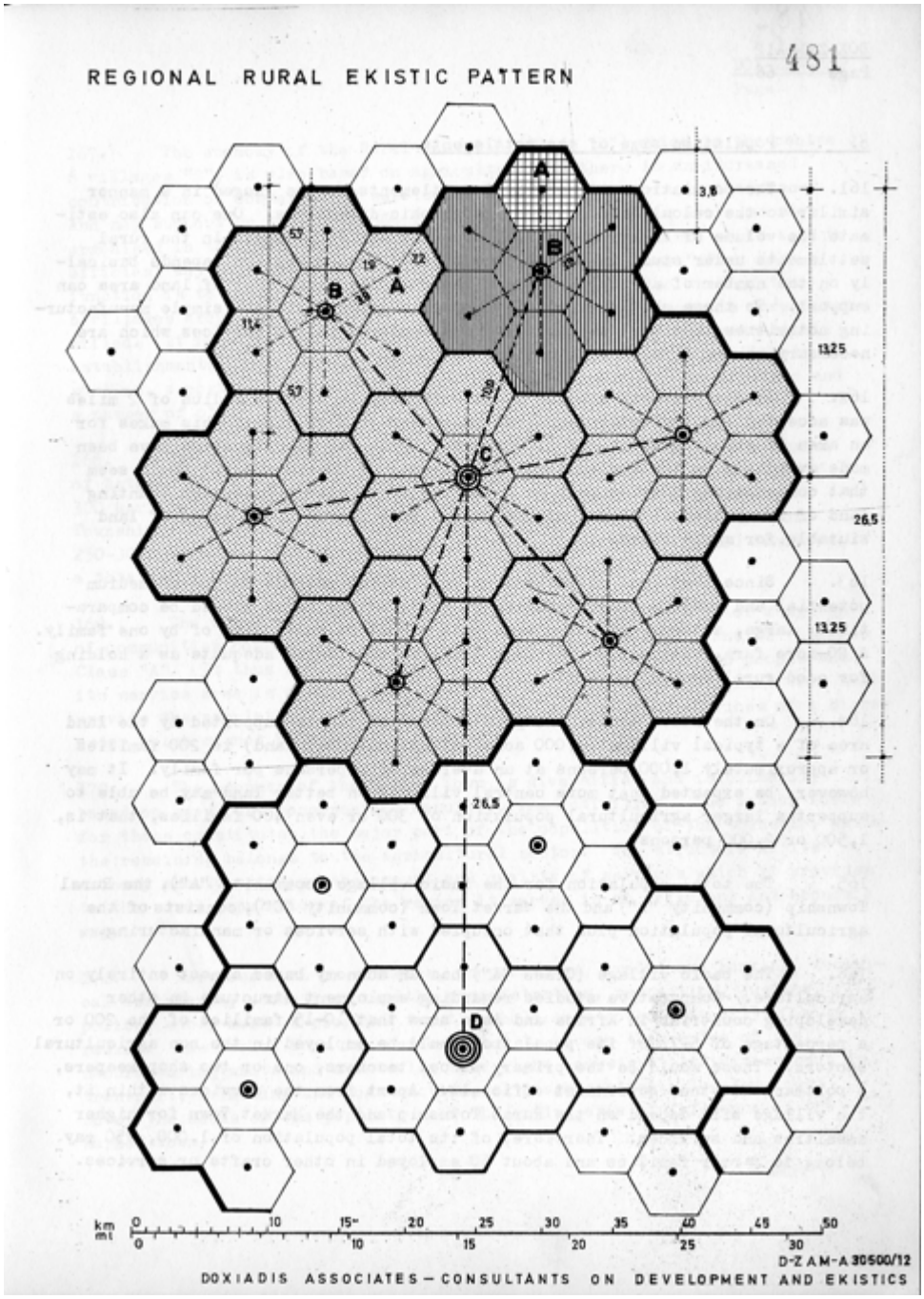


Figure 5.3
The abstract hexagonal geometry of the regional rural Ekistic pattern.

Source: 'Rural Townships of Zambia – General Report, 15 'December 1967.
Archive files 24657, Doxiadis Archives © Constantinos and Emma Doxiadis Foundation.

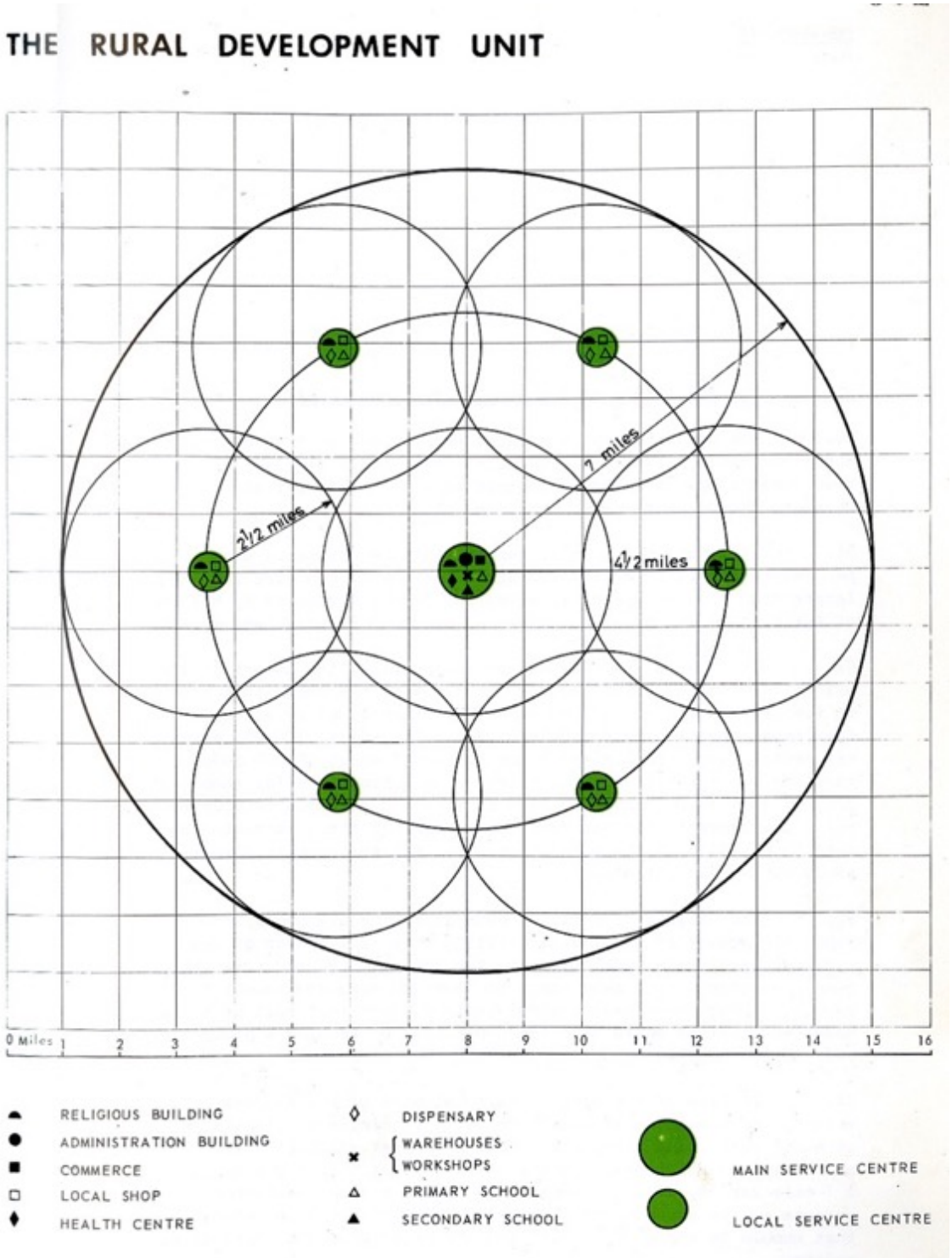


Figure 5.4
The abstract model of rural 'development unit'.

Source: 'Organization of the Countryside' June 1968, Archive files 24672, Doxiadis Archives, © Constantinos and Emma Doxiadis Foundation.

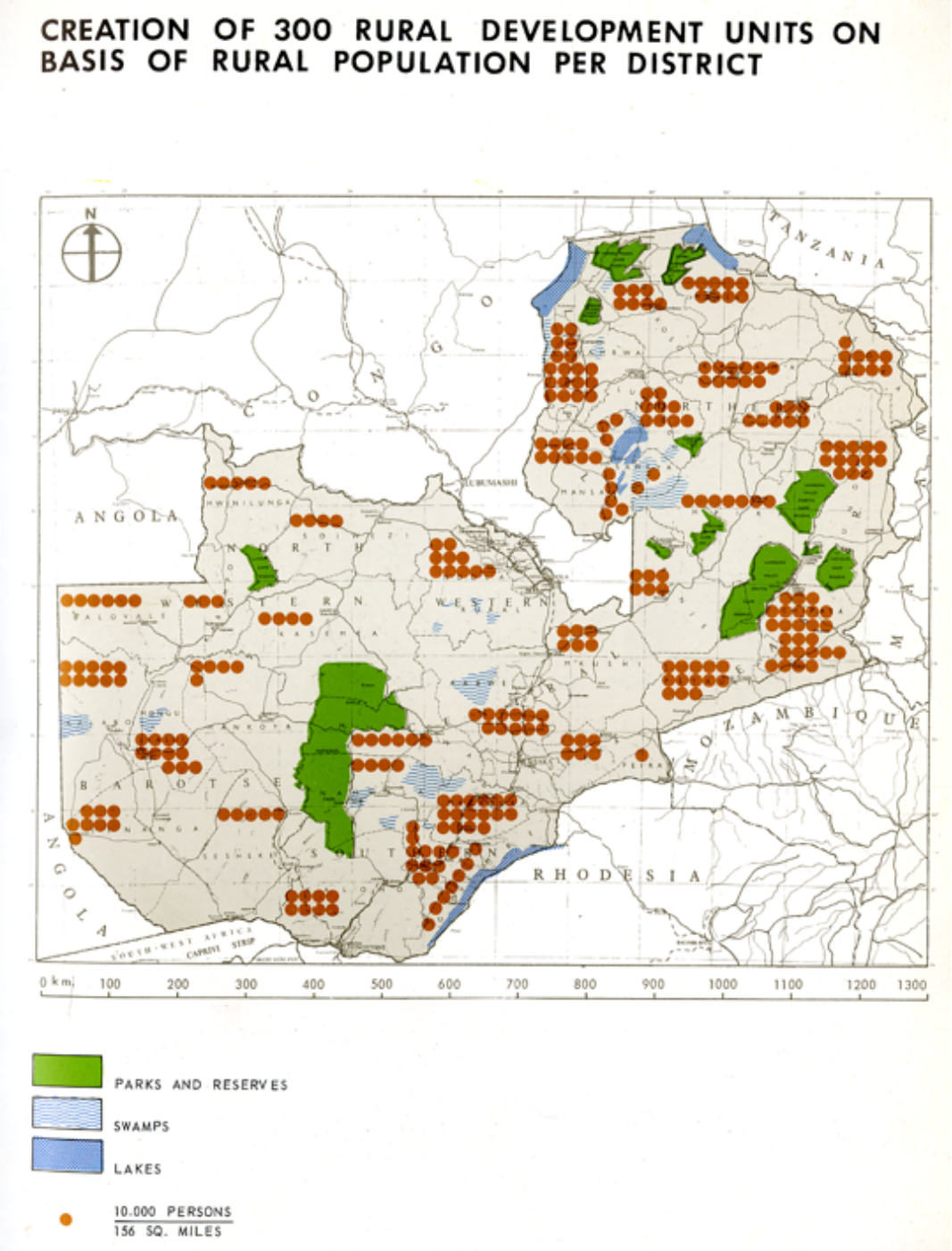


Figure 5.5
The distribution of 300 rural settlements according to district population density in Zambia.

Source: "Organization of the Countryside", June 1968, Archive files 24672.
Doxiadis Archives, © Constantinos and Emma Doxiadis Foundation.

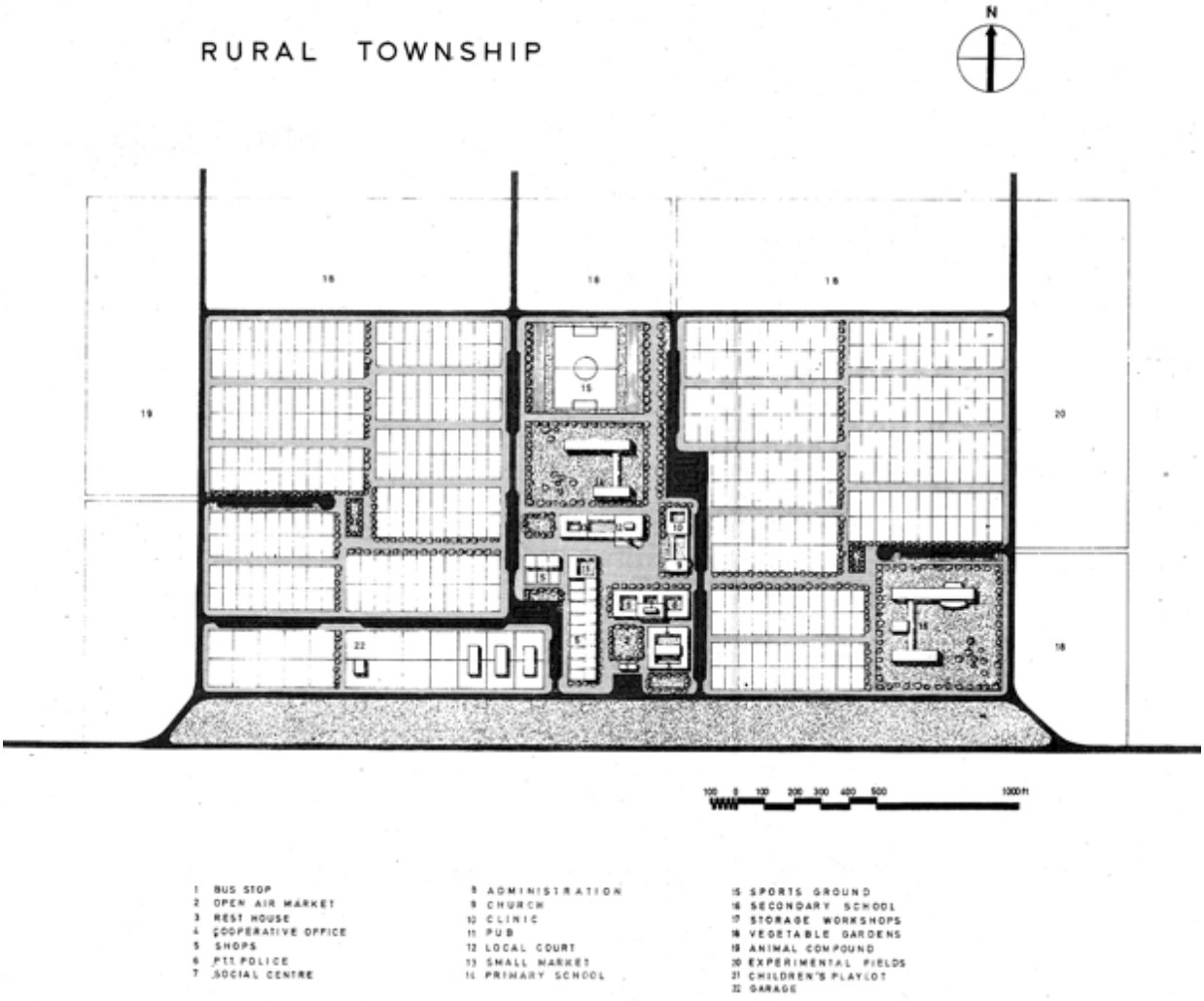
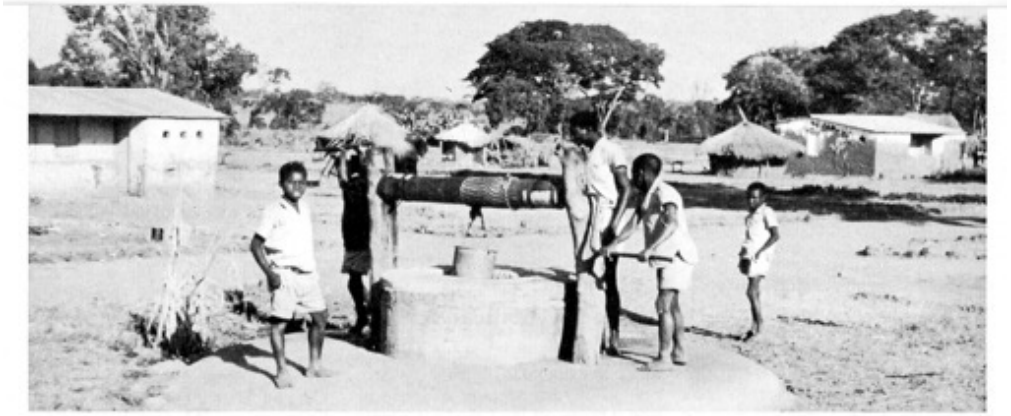


Figure 5.6
The model plan of 'rural township' was a settlement of 440x880m size for 2000 inhabitants.

Source: "Rural Townships of Zambia- General Report," 15 December 1967,
Archive files 24657, Doxiadis Archives, © Constantinos and Emma Doxiadis Foundation.



Imansa: water well scene

Open-air market at Senga Hill settlement

View of a village in the Imansa area

Figure 5.7
Photographs from Doxiadis Associates 'surveys in rural areas of Zambia.

Source: **"**Zambia: Plans for Twelve Villages Completed," *DA Review*, December 1969, p.11.