The unintended consequences of Egypt’s institutional land regime on unplanned settlement growth in the Nile Valley

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ABSTRACT

Egypt has been facing substantial unplanned human settlement growth on agricultural land since the 1950s. Although plans to better manage future settlement growth are ongoing, a full understanding of unplanned settlement growth on agricultural land remains lacking. This study investigated why and how unplanned human settlement growth occurs in Assiut Governorate, the Nile Valley. A mixed-method approach combining the institutional resource regime framework, template analysis, and process tracing was used to gain insights into those mechanisms that generate unplanned growth. Analyzing the institutional land regime between 1805 and 2020 revealed that various public policies have existed alongside of land use and property rights, but the overall regime remains incoherent. In-depth interviews with stakeholders in Assiut Governorate highlighted that the informality in Assiut was driven by institutional and political, cultural, and economic forces (a total of 26 forces). Process tracing showed that the key mechanism behind unplanned settlement growth has existed since the 1950s and is triggered by a combination of incoherent public policy, land use and property rights. These results suggest that the current national development plan (2052 Vision) will most probably lead to similar setbacks if the land regime’s complexity and incoherence are not addressed. They also revealed that several informal institutions and local values and customs could also be significant obstacles to effective regulation of the development of agricultural land in the Nile Valley and Delta Region.

1. Introduction

Human settlements have continued to experience high growth rates during recent decades, especially in developing countries where their future expansion will be the highest (Angel et al., 2007; Seto et al., 2012). Urban growth threatens global biodiversity by damaging natural habitat and biomass, reduces water quality, and may increase food insecurity (Bhatta, 2010). Although sustainable urban development approaches encourage smart, compact growth (Herold et al., 2003), many countries, including Egypt, continue to experience the consequences of over-exploiting resources (Gerber et al., 2009). Such inability to effectively regulate resource use might be caused by contradictions between public policy instruments and/or property use and rights (Kissing-Naf and Kuks, 2004).

The Nile Valley and Delta Region in Egypt is one of five areas in Africa that are expected to have high rates of human settlement growth (built-up area expansion) until 2030 (Seto et al., 2012). While the population continues to grow, most settlements in this region expand beyond their designated growth boundaries (Haiez) onto the surrounding agricultural land, contrary to the land development plans (MALR, 2010). In this study, we refer to such growth areas as unplanned (informal) settlements. Although informality has various dimensions (e.g., legal, cultural, social, and economic) (Khalifa, 2011), our primary focus is the legal dimension. Since the 1970s, the Egyptian state has responded to the unplanned growth with three strategies: (1) redistributing the population of the Nile Valley and Delta Region in new settlements in the desert (Tipple, 1986); (2) managing future human settlement growth through land use development plans (GOPP, 2009); (3) and creating legal instruments that ban unplanned growth, especially on agricultural land (Abbas, 2015).

Egypt’s 2052 Vision aims to double the country’s built-up area by adding approximately 3 million acres to accommodate the expected population of 150–180 million inhabitants in 19 new cities that have been initiated since 2014 in the Nile Valley and Delta Region’s hinterlands (MHUUC, 2014), and via land use development plans for 160 existing cities that define the new Haiez. Furthermore, legal penalties for...
those who encroach agricultural land have been increased. Nevertheless, between 1984 and 2007, approximately 1.2 million acres (82 acres every day) of agricultural land in the Nile Valley and Delta Region were lost to unplanned settlement growth (MALR, 2010). On 12 September 2020, Prime Minister Mostafa Madboly stated that two million informal buildings had been built on approximately 90,000 acres of the best fertile land between 2011 and 2020 (eXtra news Producer, 2020).

Paradoxically, the state has also announced the formalization of those unplanned settlements built before 21 June 2017, adjacent to the core built-up areas, and in 2020, the relevant law was modified to formalize all informal settlements regardless of location and construction date. Such formalization actions raise the question of whether the current policies can ever manage future unplanned human settlement growth in the Nile Valley and Delta Region, or whether they will just lead to more unplanned growth and further rounds of formalization? To address this question, it is essential to understand why and how unplanned human settlement growth occurs. Knowing why it occurs will highlight the influential processes or characteristics that accelerate or decelerate the phenomenon. Any change to these forces would, therefore, result in a new growth trajectory.

Previously, several studies have been published about the drivers of unplanned human settlement growth in the Nile Valley and Delta Region. El-Hefnawi (2005) interviewed Egyptian experts to determine whether protecting the agricultural land from unplanned human settlement growth or accepting it as the de facto solution would be preferable, and identified seven driving forces for unplanned growth: “housing shortage; the high price of agricultural land; inappropriate control tools; pressure from infrastructure on agricultural land; inefficient forms of development of desert land; lack of coordination; and limited human capacities.” Hamdy et al. (2017) used a spatial logistic regression analysis to show that, of 14 variables studied, proximity to the core urban area had the highest impact on urban expansion in Abouelreesh-Aswan (2001–2013). Osman et al. (2016b) used a mixed-method approach and identified four socioeconomic forces and seven spatial forces for urban growth in Giza Governorate (2004–2013). That analysis showed that neighborhood factors, local urban centers, access to urban uses, and major roads were significant drivers.

Although these previous efforts are significant, they have not led to a systematic understanding from a multi-dimensional perspective about the causes of unplanned settlement growth. Moreover, none examined the causal mechanisms driving unplanned growth. In other words, exactly how unplanned growth takes place remains unknown. Those previous studies also relied solely on experts as sources of knowledge, neglecting other stakeholders’ perspectives. Furthermore, most focused on the Greater Cairo Region which, as the capital of Egypt and Africa’s second-largest metacity, has unique historical, political, and socioeconomic characteristics. This uniqueness makes it hard to draw

![Fig. 1. (a) Settled regions in Egypt (98% of the population); (b) Assiut’s location in the Nile Valley; (c) Assiut’s subdivisions at the district/village level.](image-url)
generalized conclusions that are true for settlements in the two other parts of the Nile Valley and Delta Region: the Nile Delta and the Nile Valley (Fig. 1 (a)). Each context’s different geographical, socioeconomic, and cultural characteristics is highly shaping unplanned settlement growth in specific ways (Hemdan, 1981).

Our research investigates why and how unplanned settlement growth occurs in the Nile Valley, and has three objectives. First, to improve the understanding of the political and institutional dimension for managing unplanned settlement growth on agricultural land as the trigger for other dimensions that may drive informality; second, to identify the driving forces from the stakeholders’ perspectives to reveal which informal institutions are at play; and third, to describe the causal mechanisms driving unplanned growth.

Although Egypt’s institutional and political systems are centralized, the first and third objectives focused specifically on the Nile Valley. The analysis for the second objective focused on the governorate level, the highest level of the Nile Valley’s administrative hierarchy. From eight governorates in the Nile Valley, Assiut Governorate was selected because it had experienced the highest rate of unplanned settlement growth in the region since the 2011 political uprising in Egypt and had the second highest proportion (20%) of informal settlers in the Nile Valley (MALR, 2014). Furthermore, a previous study found approximately 123 km$^2$ (5.8% p.a.) of human settlement growth in Assiut between 1999 and 2020, far above the planned growth of approximately 23 km$^2$ (1% p.a.) (Abdelkader et al., 2020).

Although Assiut Governorate is the primary unit of analysis, three lower administrative levels (center, local unit, and district/village) are also included, forming an embedded case study (Yin, 2009). According to this hierarchical system, Assiut (level 2) is divided into 11 centers (level 3) that contain 66 local units (level 4) and 267 district/villages (level 5) as presented in Fig. 1 (c), (GOPP, 2009). Assiut’s population in 2017 was about 4.5 million inhabitants, approximately 4.2% of Egypt’s population (CAPMAS, 2017). With 61% of its population under the poverty line, Assiut is considered the poorest governorate in Egypt (MHUUC, 2014).

2. Theories for understanding informality

In this study our analysis has been based on four theories that are considered most pertinent for understanding the driving forces of informality in Egypt, namely: institutional, political, economic, and cultural forces. The main elements of each are described briefly below.

From an institutional perspective, Gerber et al. (2009) suggested that the more integrated the institutional resource regime (IRR) is, the greater the likelihood that sustainable resource use will result. Differentiation within IRR is based on two concepts: “extent” and “coherence” (Gerber et al., 2009). Extent can be measured in absolute terms (total number of goods or services that are regulated by a regime) or in relative terms (proportion of possible goods and services that are regulated) at a point in time. Coherence may take two forms: internal coherence refers to the degree of coordination between various public policies or the degree to which the property rights system can clearly define rights; whereas external coherence concerns the consistency between public policies and property rights related to land resources (Gerber et al., 2009). Based on relative extent and external coherence, four types of regime prevail: (1) non-existent regime in which neither property rights nor public policies regulate the resource’s use; (2) a simple regime under which a few regulations of a small number of goods and services are coherently regulated; (3) a complex regime that exists when resource uses are regulated by a growing number of regulations that are (partially) contradictory or incoherent; and (4) an integrated regime that exists when all regulations pertaining to resource use are well coordinated and coherent.

Considering political forces contributing to informality, Dekel (2020) demonstrated that the interests of politicians may protect, sustain and/or formalize unplanned growth. This allocation and management of scarce land resources may be determined by corruption and clientalism (Tannerfeldt and Ljung, 2006), in which some politicians seek to secure votes by not passing land and property laws that would be against the interest of potential voters, thereby increasing their chances of reelection.

From an economic perspective, (Lacabana and Cariola, 2003) explained informal growth as emerging when governments cannot provide subsidized housing due to political unwillingness or weakness, which forces middle and lower-income classes into informal housing markets to satisfy their shelter needs. Brueckner and Selod (2009), and Smolka and Biderman (2011) viewed unplanned growth as the outcome of economic choices that are made based on the relative costs of formal and informal housing. In other words, a household chooses informal housing when its cost (including the prevention of eviction) is less than the cost of obtaining permits, buying land formally, and paying taxes (Brueckner and Selod, 2009; Smolka and Biderman, 2011).

Also, Nkurunziza (2008), Alfasi (2014), and (Dekel, 2020) showed that informality may also be understood from a cultural perspective when the values and norms of traditional communities contradict those of the modern state, leading people to build outside of formal frameworks.

Based upon the four theories described above, three hypotheses were formulated:

- H1 considers the institutional and political forces together as they are clearly interrelated. We assume that if land policy and its instruments do not promote sustainable growth and the formal institutions have weak governance, informality increases. The hypothesis is the more integrated that the institutional land regime is, the greater the likelihood that sustainable use will result.
- H2 considers the role of cultural forces. The hypothesis to be tested is that when the formal rules ignore or depart from cultural norms and values, people tend to ignore such rules, increasing informality.
- H3 considers the role of economic forces. The hypothesis is that informal development is driven by the substantially lower costs of informal housing relative to formal housing.

3. Methodology

Three main methods were used. The institutional resource regime (IRR) framework (Kissling-Naf and Kuk, 2004) was used to reveal the relevant formal political and institutional forces. Template analysis was used to study the informal institutions and their contribution to unplanned growth on agricultural land based on in-depth interviews with various stakeholders. Third, process tracing methods were used to identify how unplanned growth occurred. Each approach is discussed in detail below.

3.1. The institutional resource regime framework

The IRR framework was chosen to systematically analyze the institutional regime toward land as a resource and how it relates to unplanned human settlement growth in the Nile Valley. In a nutshell, the IRR framework facilitates understanding the influences of both private law (property rights, etc.) and public policy (public laws, regulations and instruments formulated at various levels of government) on resource governance (Gerber et al., 2020). It also indirectly sheds light on informal institutions that may co-exist often with weak formal institutions. IRR’s basic elements are the resource, actors, and institutional rules (Gerber et al., 2009; Kissling-Naf and Kuk, 2004). In this study, agricultural land is considered as a natural resource that has the reproductive capacity for various types of goods or services (e.g., food production, housing, other land uses) and the misuse may of which lead to a drop in its productivity. The actors are the group(s) of users who contribute to the revival/depletion of the resource’s productivity. Property rights define how the land resources are owned, the right of
disposition and use rights. Public policies are the laws and regulations that seek to control the use of the resource, usually in a sustainable manner. The public policies under investigation are those that deal with the housing and agricultural sectors because most unplanned settlement growth is for residential use, and occurs on agricultural land (GOPP, 2009).

3.2. Template analysis

To understand how informal institutions contribute to unplanned settlement growth, semi-structured in-depth interviews were held with local community members and experts to obtain multiple perspectives on the issues at hand (Pfeffer et al., 2013). The five steps that were followed are discussed below.

3.2.1. Actors

El-Hefnawi (2005) and Nada (2014) identified several types of stakeholder involved in managing and accelerating unplanned settlement growth at Egypt’s various administrative levels. We distinguish between governmental actors at various levels, including all organizations responsible for monitoring and managing (un)planned growth and civil society actors (i.e., farmers, settlers, land brokers, and urban planning consultants) in as far as they contribute to unplanned settlement growth (Fig. 2).

3.2.2. Selected participants

Due to the variety of actors across multiple levels, purposive sampling was used, whereby participants in specific contexts were selected at the basis of their relevance to the research question (Bryman, 2012). Interviews were conducted until no new data was forthcoming. Thus, although this study had no targeted number of participants, all identified actors in section 2.2.1 were targeted as knowledge sources. It is notable that because all people’s assemblies in Egypt, except for the national people’s assembly were dissolved in January 2011 (Nada, 2014) participants who were affiliated with such entities were excluded from the study.

3.2.3. The interview guide

Two interview guides were developed: (1) for governmental stakeholders and urban planning consultants, (2) for civil society actors. Both guides addressed the three principal dimensions for explaining human settlement growth (political and institutional, cultural, economic) and the current land use development plans were also used as inputs to the interviews. To validate participants’ responses, a triangulation strategy was adopted. This was implemented by using participants’ responses interchangeably as input questions for other participants at the same level or different levels. The interview schedule was distributed between the various levels and/or actors in the same week. Thus, the two interview guides were subject to revision and iterative improvement according to information gained through triangulation.

3.2.4. Interviews

Fifty-four interviews lasting an average of 25 min were conducted between April and July 2018 (12 government actors under a condition of confidentiality and 42 civil society actors (Fig. 2). The interviews were recorded and later transcribed by the lead author. Most of the selected participants who represent governmental stakeholders at the central and village/district levels refused to participate because they were not authorized to discuss unplanned growth.

3.2.5. Data analysis

Template Analysis (Brooks and King, 2014) was used to analyze the interview transcripts and identify unplanned settlement growth driving forces. This method is a hybrid of deductive and inductive methods, where prior themes can be used in the coding process. Interview guides were tailored for identifying those forces driving unplanned settlement growth from a multidimensional perspective, also used later in the text analysis. The coding process started with open coding by converting each line in the transcript into one of 26 specific codes. Next, focus-coding was performed to synthesize the most frequent and significant codes into seven themes, which were then aggregated into the three principal dimensions. ATLAS-ti was used to process the transcripts.

3.3. Process tracing

After identifying the driving forces, the causal mechanisms that link the drivers to unplanned settlement growth were identified. (Beach and Pedersen, 2016) defined a causal mechanism as “a theory of a system of interlocking parts that transmits causal forces from X to Y.” Therefore, any causal mechanism consists of three elements: (1) a trigger force X, (2) interlocking parts that link causal forces, and (3) an outcome Y. They also demonstrated that each part of the mechanism is composed of entities (actors) that undertake activities (Beach and Pedersen, 2016).

Process tracing was adopted to identify causal mechanisms in unplanned settlement growth. Although some scholars consider process tracing as a single method (George and Bennett, 2005; Gerring, 2007), Beach and Pedersen (2016) divided process tracing into three types: theory-testing, theory-building, and explaining-outcome. Theory-testing process tracing seeks to deduce a theory from existing literature and test it to show all parts of the hypothesized mechanism. However, the theory-building traces attempts to build a generalizable theoretical explanation for a specific outcome based on empirical evidence. Finally, explaining-outcome process tracing focuses on developing a plausible explanation for a historical event.

We relied on theory-building process tracing because it is suitable for identifying causal mechanisms when the outcome is (Y – unplanned settlement growth) but what caused it to occur is uncertain (X - the trigger forces and the mechanism are uncertain). Three steps were implemented: collecting evidence, inferring the existence of manifestations, and finally inferring the existence of a causal mechanism. Collecting evidence was achieved within the IRR framework and applying template analysis, while results allowed for inferring the existence of manifestations and their causal mechanisms.

4. Results and discussion

In this section, we present the results and discussion of applying the IRR framework, the template analysis results, and the process tracing theory-building to the issue of unplanned human settlement growth in Nile Valley.

4.1. The institutional land regime

Four elements were analyzed using the IRR framework: (1) the resource (Agricultural land as the study area is the Nile Valley); (2) actors; (3) property rights; and (4) public policies. Understanding these four elements enables us to categorize the regime system and to test the hypothesis concerning the ability of this regime for sustainable using of agricultural land as the resource.

4.1.1. The agricultural land

Agriculture was the main contributor to Egypt’s economy until the 20th century when its contribution declined due to industrialization (Kazim et al., 2018). Meanwhile, exponential population growth starting from the 1950s led to an increased demand for land for housing and other settlement related functions. As only 11,883 km² of the Nile Valley’s area of 130,000 km² is non-desert, competition for land is high. This competition is between those who want to use the land for agriculture and others who wish to use it for non-agricultural purposes.
As substantial areas have been constructed (El-Hefnawi, 2005; MALR, 2010), the central government has become increasingly concerned about food security.

4.1.2. Actors

Our analysis distinguishes two types of actors: (1) the main political and institutional bodies with various mandates related to land use (Table 1 and Annex A); and (2) civil society actors. The latter includes farmers, urban planning consultants, settlers, and land brokers (Fig. 2).

4.1.3. The basis of agricultural land property and use rights

Rights of ownership and disposition in Egypt were radically changed by Mohammed Aly (1805 – 1848) (El Araby, 2003). Although the state retained ownership of the land, he allowed peasants to use and control 5–8 ha and to transfer their rights to their heirs. In 1858, the Ottoman Empire (which controlled Egypt at that time) passed a property law that allowed peasants to own lands. This law recognized five land types: (1) state land; (2) dead land; (3) endowment land (for charitable purposes); (4) public use land (streets, etc.); and (5) private land. It also allowed those who reclaimed dead land to gain ownership of that land. By the 144/1936 law, private land ownership was expanded such that anyone could buy state land in lieu of paying six years of property taxes, and anyone who had used state land for more than 15 years could claim ownership if the claim was not disputed by others (El Araby, 2003). These disposition and ownership rights have been maintained until recently. Since 1952, a variety of public policies to regulate property rights have been adopted. These are discussed in Section 4.1.5.

4.1.4. Internal assessment of property rights

In Egypt, the possibility to attain formal private tenure through informal land occupation over a 15-year period is a source of potential conflict between potential property owners and the state. The longer...
such informal occupation and use is ignored or tolerated by the state, the higher the land user’s sense of security and the greater the perceived impact should the state pursue eviction of the land user. In 2017, a large number of evictions of long term land occupants has been undertaken (CNN Arabic Producer, 2017).

4.1.5. Public policy towards land ownership and use

In 1952, a new land reform policy that restricted individuals’ maximum land ownership rights was adopted. First, the 1952 law restricted individual ownership to 206 acres (Stella, 1957). That was then decreased in 1961 to 103 acres (El-badry and Gadalla, 1964) and, in 1969, decreased once more to 51 acres (El Araby, 2003; Said, 2007; Seyam and El Bilassi, 1995). The resulting surplus, approximately 1.2 million acres, was seized by the state and redistributed to landless farmers (2-5 acres/peasant) (Kassim et al., 2018; Stella, 1957). As a result, the number of landholdings increased by more than 50% between 1961 and 1984, whereas the agricultural area increased by only 6.6% (Seyam and El Bilassi, 1995). In 1974 the restriction of the maximum ownership area was abolished when the political regime changed (H. Said, 2007).

Regarding land-use rights, the first law (23/1911) that allowed landowners to change the land use from agricultural to any other use was introduced in 1911 (El Araby, 2003). Due to the expansion of unplanned settlement growth on agricultural land, Law No. 53/1966 made building on agricultural land, without the prior approval of the Minister of Agriculture, a crime (Abbas, 2015; Said, 2007). Agricultural cooperatives were responsible for reporting any encroachment and the Court could sentence an encroacher to be jailed or fined and could require any illegal building to be demolished. The Ministry of Interior was responsible for the law’s implementation (Abbas, 2015). In 1983, penalties for illegal land conversion were increased in Law No. 116/1983 and shifted authority for approving land use change to the Ministry of Housing, which had defined growth boundaries for all settlements that were to be implemented at the local level (Abbas, 2015). This law faced many legal obstacles and in 1997 the Constitutional Court (Egypt’s highest court) ruled that some parts were unconstitutional (Abbas, 2015). Its many loopholes allowed many encroachers to escape prosecution leading to a strengthening of that law in 1997.

In 2006, a Presidential Decree (304/2006) legalized all previous encroachments on agricultural land (Said, 2007). After a strategic plan for land use development for almost all of Egypt’s cities and villages was approved a third attempt to criminalize settlement growth on agricultural land through Law 119/2008 was adopted (Abbas, 2015). This law required any building outside the growth boundary to be demolished but its implementation also failed (Abbas, 2015). Later, Ministerial Decree 985/2009 allowed farmers to build on their land under four conditions: (1) if they owned more than 5 acres; (2) if the landowner owned no other residential unit; (3) if the land was near a road; and (4) if the area of the building did not exceed 250 m² (Abbas, 2015).

However, after 2011, massive unplanned growth occurred on agricultural land, forcing the state to modify the regulations again (MALR, 2014). By Ministerial Decree 1836/2011 (Abbas, 2015), the area that could be built on for residential use on agricultural land has to be less than 2% of the total area owned. However, by Ministerial Decree 615/2016, the 985/2009 rules were again applied (Abbas, 2015). In 2018, the penalties for unauthorized building were again increased. The Reconciliation Law for Informal (2019) allowed the formalization of unplanned buildings on agricultural land that had been built before June 2017 by paying a fine (The Arab Republic of Egypt Presidency, 2019), however, Law 1/2020, modified it to allow formalization irrespective of construction date (Reconciliation Law for Informal, 2019).

4.1.6. Public policy towards housing

Between 1805 and 1952, a housing policy did not exist in Egypt. Unplanned settlement growth on agricultural land was not significant because the population (20 million inhabitants in 1950) was low relative to the present day (CAPMAS, 2007). Public policies towards housing in the Nile valley had three instruments since 1952. The logic behind these three instruments was to control settlement growth in the Nile Valley, and to move the surplus population outside the Nile Valley.

The first instrument was land development plans for settlements inside the Nile Valley. Until 1982, all rural settlements grew autonomously, while land development plans were prepared only for major cities. Sutton and Fahmi (2001) found that these plans always failed to control settlement growth. In the 1980s, GOPP initiated master plans for all Egyptian cities and villages (GOPP, 2020). The principles for these master plans were to accommodate the predicted population of the targeted year by adding some of the adjacent agricultural land for the Haiez, to formalize informal settlements that adjoined the core built-up areas, and to upgrade the public infrastructure and provide essential services (e.g., primary schools) (Abdelkader, 2011; Sutton and Fahmi, 2001). Urban consultants developed the plans under GOPP supervision, while their implementation was to be coordinated between the Ministry of Housing and the local units. However, civil society actors (settlers, NGO, etc.) were excluded from plan preparation (Khalifa, 2012). No such master plan, whether for Cairo or other parts of the Nile Valley or Delta, have been successful in controlling (unplanned) settlement growth (Sutton and Fahmi, 2001; Khalifa, 2012). Similar to other parts of the Nile Valley and Delta Region, most settlements in Assiut Governorate doubled in size between 1986 and 2006 (GOPP, 2009; MALR, 2010).

By the early 2000s, the planning approach shifted from master planning to strategic planning (Khalifa, 2012). In 2005, a national program was started to create village plans and city plans with time horizons of 15 and 20 years, respectively (GOPP, 2006) which were to be revised every five years. Later, Law 119/2008 (Abbas, 2015) mandated the GOPP to develop strategic plans and then detailed plans at the national, regional, governmental, and local levels (GPP, 2020). The strategic plans were to accommodate the estimated population by delineating growth areas to preserve agricultural land, formalize unplanned settlements adjoining the core built-up areas, use undeveloped patches of land (vacant pockets) inside the core built-up area, promote

2 Decree law No. 178 / 1952, retrieved from https://www.marefa.org
3 Decree law No. 127 / 1961, retrieved from https://www.marefa.org
4 Decree law No. 50 / 1969, retrieved from https://www.marefa.org
vertical rather than horizontal growth, use a participatory planning approach, propose projects that would improve the infrastructure and create jobs (GOPP, 2006). GOPP’s regional branches were responsible for administering the strategic plan and for its development, with the participation of the people’s assembly, civil society groups, private sector, and local units’ employees. Draft strategic plans were to be approved by the governor and the people’s assembly, then by the Minister of Housing and the Minister of Agriculture, and finally, by the Supreme Council of Planning and Urban Development. After a strategic plan’s approval, a detailed plan had to be developed and approved by the same process as the strategic plan (Nada, 2014). Although the implementation of detailed plans was the local units’ responsibility, a dispute with the GOPP arose around its lack of financial and human capacities that led to implementation being centralized in GOPP in 2008, only to be relinquished to the local units in 2011 (Nada, 2014).

The contributions of civil society in plan development were usually rejected by the Ministry of Agriculture, thereby reducing their subsequent willingness to participate (Nada, 2014).

The second instrument was to provide lower-income urban settlers with subsidized residential units. Between 1952 and 1974, the state provided approximately 800,000 subsidized units for the lower-income households, mostly in remote desert locations (Sims and Abd-El Fattah, 2016). After 1974, the housing policy focused on the desert as the best option for decreasing the pressure on the Nile Valley. This policy was called “Desert Invasion” and it was a top-down strategy from President Sadat. Accordingly, a new institution was established for implementing this policy (Ministry of Construction which then transferred its mandate to the New Urban Communities Authority in 1979). Lower administrative levels (e.g., local units) were excluded from these projects. Nine new cities, designed as economically independent industrial cities, were built in the Nile Valley (New Urban Communities Authority, 2020; Said, 2010, 2007; Sims, 2015; Tipple, 1986). Though their targeted population by 2020 was approximately one million inhabitants, their 2020 population was only approximately 205,000 inhabitants (New Urban Communities Authority, 2020). After 2014, the state continued to promote its “Desert invasion” approach, launching the construction of four new cities (New Urban Communities Authority, 2020). Moreover, extension areas were added to many existing new cities, including 95,000 dwellings for the lower-income households in the Nile Valley (The Arab Republic of Egypt Presidency, 2021).

The third instrument was to accommodate rural settlers in agricultural mega-projects that aimed to reclaim desert land and accommodate the lower-income households of rural settlers. The first project was The New Valley which aimed to attract four million inhabitants from the Nile Valley by 2020 (Sims, 2015). However, the 2016 census showed that New Valley’s population was only approximately 200,000 inhabitants. In 1997, a new mega project for rural settlers, managed by the General Authority for Reclamation Projects and Agricultural Development, was launched to reclaim between half a million and two million acres of desert and attract four to six million settlers from the Nile Valley (Kassim et al., 2018; Sims, 2015). Despite broadening the target group to also include higher income households, this project has also failed to meet its promised population targets (Sims, 2015). By 2015, the project had achieved less than 1% of its targeted population (Shawkat and Hendawy, 2016). Another attempt to relocate rural settlers was the 400 New Towns Project (Kora El-Zaher El-Sahrawy) (Sims, 2015). This project, jointly managed by the Ministry of Housing and the Ministry of Agriculture, had a targeted population of four million inhabitants by 2020. By 2015, only 21 towns had been built, but these were largely unoccupied and nearby desert land had not yet been reclaimed (Shawkat and Hendawy, 2016; Sims, 2015).

4.1.7. Public policy towards agriculture

Unlike the public policy towards housing, the public policy towards the agricultural sector had two instruments. The first was to reclaim desert land and accommodate surplus rural settlers (The New Valley, Toshka, and Kora El-Zaher El-Sahrawy). However, all these mega projects failed in achieving the targeted agricultural area and population (Sims, 2015; Shawkat and Hendawy, 2016) except Toshka which succeeded in cultivating around half of the targeted areas when the government focused on companies rather than smallholders (Sims, 2015).

The second was to subsidize the agricultural sector. Between 1805 and 1952, the colonial regime controlled the agricultural sector by mandating crop rotation schedules and allocating crop area. Between 1952 and 1982, the state mandated crop rotation schedules, allocating crop area and subsidizing farm inputs, and the delivery of crops at fixed prices (Cassing et al., 2009). After 1982, the state implemented a liberalization policy (Kassim et al., 2018). By 2002, input subsidies were further reduced, all state control on prices and mandatory crop rotation were removed, and the state’s involvement in operating and maintaining public irrigation and drainage was reduced (Kassim et al., 2018). Though Egypt’s agricultural sector was described by the IMF an open and export-oriented market economy, it also reported that this economic transition could not deliver new jobs, improve productivity, nor reduce poverty; attributing the under-achievement to poor governance and management inefficiencies (Bush, 2007). The subsidy of gas and electricity which most farmers need for irrigation was ended in 2015.

4.1.8. The internal assessment for the public policy towards land ownership and use, housing, and agriculture

From Section 4.1.5, we see that several laws and decrees have been enacted to formalize land tenure and the use of agricultural land. However, because some regulations contradict others, their overall coherence is weak. For example, the 2006 Presidential Decree (304/2006), Law No. 7/2019, and Law No. 1/2020 contradict all previous laws that criminalize building on agricultural land. Moreover, the participation of four different governmental institutions in reporting and responding to encroachment complicates coordination and reduces coherence. The process from reporting an encroachment to the decision delivery takes years. Further, the iterative increases in penalties for unplanned building on agricultural land reflect a continuous failure of the property and use rights system spanning more than fifty years.

Since the early 1970s, three main planning instruments have been used to control unplanned settlement growth on agricultural land in Egypt: (1) population relocation to new settlements on reclaimed desert land; (2) relocation to economically independent new cities; and (3) the enforcement of settlement growth boundaries through various types of land use plan. The continued unplanned growth of existing settlements in the Nile Valley and Delta Region is in stark contrast to the relatively low growth observed in the many new desert-based settlements. Despite the ability to apply sanctions for the former and existence of incentives for the latter (e.g., free land), neither strategy has been effective in directing settlement growth to the desired locations. The policies for regulating agricultural land conversion are incoherent, and their extent is perhaps too limited in scope to be successful in the light of the complexities surrounding land access and use in Egypt.

The policy shift toward agricultural liberalization was also incoherent with the stated desire of protecting agricultural land from unplanned development. This shift has not been accompanied by increased production or farm incomes (Elmenoffi et al., 2014), especially those of smallholder farmers (Kassim et al., 2018; Shawkat and Hendawy, 2016). Falling product prices and rising costs have increased the incentives to convert farmlands into building plots, whether permitted or not by law.

4.1.9. The external assessment for the IRR Regime

Since 1805, the land regime (and land is mostly agricultural in the Nile Valley) has transitioned from a simple to a complex regime. Although unplanned growth had already occurred before 1952, that was not problematic due to low population pressure. Thereafter, the land regime has become more complex, driven by an increasingly fragmented agricultural landscape (in 2015, of the 5.4 million landowners owning...
less than 5 acres, almost half owned less than 1 acre (CAPMAS, 2016) and high demand for housing and other public services. Major inconsistencies have emerged and persisted between and within public policy and property rights in Egypt and we find that the increasingly complex land regime has led to less sustainable land use.

4.2. Unplanned human settlement growth driving forces from stakeholders’ perspectives

4.2.1. Institutional and political forces

Our analysis highlighted that poor governance is a major driver of unplanned growth (Table 2). Although many attempts have been made to improve Egypt’s governance, most governmental respondents reported many systemic obstacles to tackling unplanned growth. Egypt’s centralized administration, the dominance of the top-down decision-making process, and the absence of participation at lower levels of decision-making were all said to lead to many inapplicable decisions and plans. In other words, there is a gap between the decision-maker and lower-level officers who are supposed to implement the decisions, which contributes to policy failure therefore and unplanned growth.

Furthermore, stakeholders referred to the need to reconsider the current administrative hierarchy for human settlements in Assiut. As the current administrative hierarchy has been largely fixed since the 1950s, it no longer reflects the current socioeconomic structure of Assiut’s settlements. Also, many local-level governmental officers are unqualified. For example, we met several officers working at agricultural cooperatives without any agricultural education and many officers at the local level lack internal training or assessments. Accordingly, their performance is low, which hinders the tackling of unplanned growth.

The stakeholders also observed delays in work and conventional communication techniques as factors in weak governance. As many decisions on land development are made at the highest level, delays of several years may occur. An officer at one administrative unit remarked:

“If anyone builds on his agricultural land, the agricultural cooperative officer has to issue a report which describes the area of encroachment (.). Our responsibility is to preview the encroachment site and send both reports to the center level’s administrative unit. Then, it must be sent to the administrative unit at the governmental level. After that, the reports must be sent to the court where the case started. This process could take months until the trial starts. The government in Egypt does not recognize computers and emails. Therefore all communications must go as they used to go since the 1950Es. The trail itself would take years, and the encroacher does not wait.”

Administrative fragmentation also emerged as a related feature of poor governance. Although building on agricultural land is illegal, all utility companies (electricity and water) connect their networks to informal units. Thus, from the encroacher’s perspective, municipal building approvals are unnecessary. Said, a settler who works at the public water company in El-Bora, defended the company’s perspective:

“People will connect their informal units to electricity and water, with or without the company’s approval. The company is looking for profit, and there was no profit until the Prime Minister, in 2013, permitted these companies to allow connections to informal units.”

Corruption is another component of poor governance, though there was disagreement amongst respondents about the degree of corruption and whether it accelerates unplanned growth. Civil society stakeholders reported that corrupt officers at the local level have a fundamental role in supporting informal building on agricultural land. Moheb, a farmer in Om El-Kosor, clarified this:

“I am not talking about rumors here and there; I am talking about several personal experiences where I had to pay the public servants to freeze the report until I finish the construction works. I have also paid them to reduce the fine for the informal building. This fine is calculated according to the area of the building and the number of floors. I have built a 120 m² house with three floors. They wrote in the report that the building is 65 m² with one storey. My cousins have done the same with

<table>
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<tr>
<td>Institutional and Political Governance</td>
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<td>Labor-intensive agricultural processes</td>
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<td>Land market</td>
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<td>Land as a savings tool</td>
<td>To buy land as a financial investment for the future</td>
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<td></td>
<td>Top-down decision-making process</td>
<td>The settlements’ hierarchical system is fixed since 1952, and public investment is distributed regardless of the socioeconomic dynamics that occurred since 1952.</td>
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<td>Outdated administrative system</td>
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<td>Local authority officers’ low capacity</td>
<td>e.g., slow communication between levels in the same organization or between different organizations</td>
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<td>Disrupting bureaucratic structure</td>
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<td></td>
<td>Administrative fragmentation</td>
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<td></td>
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<td></td>
<td>Local authority officers’ low incomes</td>
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<td></td>
<td>Lack of transparency</td>
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(continued on next page)
the same officers. This job cannot be done unless all officers cooperate from the highest to the lowest level.”

By contrast, most governmental officers responded that Moheb’s story was not common practice, stating that most encroachments were listed, and the required reports were issued. However, one officer supported this claim, citing low salaries and lack of equipment and resources for the lack of enforcement. However, he also referred to social and community ties and shelter as a basic need:

“You also have to consider that we are part of the society where the encroacher is my cousin or neighbor. Those are your people, and you know their living conditions. What would you do with your poor cousin who cannot find any other shelter than his informal unit? Would you help enforce the law and demolish the building? However, this will not make it to demolish because of the anticipated tough reaction. If we have this power to face every case of encroachment. (...) In many cases, we decide not to bring the agricultural land back. Would you demolish your cousin’s informal unit while you know that this law does not apply to people with high government positions such as police officers and Judges? It is a lose-lose situation.”

4.2.1.1. A judge at assiut’s primary court explained. “We have thousands of cases that we have to deal with, where it is regarding the encroachments or other issues. We are also constrained by the law, which has many loopholes that give the encroacher time to finish the building before finishing the jurisdictional process. Even when we issue the verdicts, the police forces have the right not to apply my orders for security reasons.”

4.2.1.2. A brigadier general at the directorate of internal security in assiut spoke about inaction on court rulings. “The major obstacle we face is the expansion of illegal weapons held by every family in the rural area. We face huge resistance from the informal units’ owners. They use weapons to defend their houses from being demolished. Do not forget that this house might be the only shelter they have. (...) we do not have enough power to face every case of encroachment. (...) In many cases, we decide not to demolish because of the anticipated tough reaction. If we have enough forces, we can enforce the law. But under current conditions, we have to compromise.”

Stakeholders also highlighted that the suspension of all elected institutions at the governorate, center, and local levels, since 2011 has had an indirect effect on unplanned growth. These elected institutions used to have some authority, which enabled them to participate in decisions made at the Governorate level by the Governor. By cutting the only connection between the people and the government, all powers were assumed by the Governor. At the national level, it was reported that specific families or tribes dominate political representation in the parliament and who used their powers to sustain unplanned growth. Hundreds of acres of agricultural land owned by these families have been built on without anything being demolished. Moreover, to secure votes, most members of parliament try to support encroachers by representing and approving reconciliation laws in return for political support. For example, the reconciliation law of 2019 added “adjacent” informal units to the Haiez of each settlement in Egypt, without defining what “adjacent to the Haiez” means. Such vagueness allows the regularization of large tracts of unplanned development. This situation reflects with Dekel’s (2020) description of the political dimension impact on preserving informality.

Public policy might be expected to have a profound impact on unplanned growth, however, there is an explicit confirmation that some current policy instruments are ineffective. The most criticized instruments were physical development plans (e.g., the National Project for Village Strategic Plans and the National Project for City Strategic Plans). Although these plans were supposed to have a socio-spatial focus, they ignored rural inhabitants’ lifestyles and their preferences for family houses. Accordingly, people wanting a family house must turn to the informal sector. Planning processes also lack mechanisms for participation and monitoring during project implementation, reducing their effectiveness, and further stimulating unplanned growth.

Our respondents confirmed that the “desert invasion” has failed to address the housing crisis, stimulating unplanned housing in and around existing rural settlements. New desert settlements, especially the rural ones, lack the socio-economic and cultural characteristics that motivate rural inhabitants to desist from building on agricultural land and settle in these new settlements. Allàa, a settler in El-Mandra Bahary, lamented:

“Who wants to live in a tiny unit in the heart of the desert with not enough public transportation (...) family (...) basic services, schools, and hospitals? Are these services available in these new settlements? (...) We already do not have enough services in the old settlements, and our money has built the available services in my village without any government participation. Do you want me to go elsewhere and start from scratch to save the agricultural land (...) If I save the agricultural land, who saves me?”. Besides the drawbacks of physical development plans and their relationship with the housing crisis, the set of laws that criminalizes unplanned growth were identified as being insufficient. Starting from the “Criminalization of building on agricultural land law No. 53/1966” until its last modification in 2018, there is a continuous gap that allows encroachers to escape punishment. A judge at the primary court in Assiut clarified this:

“The report by the expert, who is appointed by the court, is the backbone of the case. (...) Suppose the report says that the unit was built before 2006, or it says that this land had no source of irrigation before building the unit. In that case, I have no choice except to drop the legal penalties, which are: demolishing the building, imprisoning, and fining the encroacher. We know that this report might be compromised, but we have no other way to validate it. Lawmakers must consider that increasing the fine is not the key solution. We have been raising the fine since 1966, but with no effect on the ground. What needs to be addressed is the process of investigating the case by the expert. It has to improve using technological techniques. Moreover, they have to find an alternative housing unit for poor people according to social status.”

He also highlighted that some encroachers, especially the wealthier ones, escape punishment through the services of a paid Kahoul (stand-in), whose name is used in lieu of the encroacher’s name during any legal process. Any penalties would be assigned to the Kahoul, who sometimes might actually be a dead person or a person who already has a criminal record or is already in jail. Taken together, these responses support the view that Egypt’s
political and institutional context was characterized by many shortcomings that led to increases in unplanned settlement growth, as discussed in Section 3.1. Respondents from the agricultural cooperative and the local unit agreed that local officers’ low capacity, low incomes, disruptive bureaucratic structure, and the top-down decision-making process were all drivers of unplanned settlement growth. Accordingly, the institutional and political dimension (H1) has had a positive impact on sustaining informality since the 1950s.

4.2.2. Cultural forces

Results of the interviews showed that the cultural dimension contributes to unplanned settlement growth. Stakeholders from various fields clarified that a big family strengthens one’s social status and all mentioned the phrase “Ezwah” (the big family that one can rely on if needed). The concept of Ezwah leads to big households. Stakeholders also shed light on the culture of living together as a family in one cluster. Accordingly, if one family member builds an informal unit, there is a high probability that other family members will follow, regardless of the consequences.

4.2.2.1. An officer in one village’s administrative unit said. “We have observed many cases of informal units which have been built by members from the same family in the same area... one by one. They refuse anyone who is not a member of their family to live between them... I can show you clusters of the informal buildings which the same family occupies at each cluster.”

Living in clusters may also increases the rate of immigration following other family members which may not be considered while preparing land development plans.

Another cultural force is ensuring the future of family successors. Aly, a farmer from El-Dwear, described how his big household and overcrowding motivated him to build on his agricultural land: “…I have four boys and two girls (.) after a while, those boys will marry, and I have not enough space for their spouses and kids (.) I have to build something for my family, and the only way to do so is by building on a part of the land that I cultivate.”

Respondents clearly prefer owning a house to renting. Many respondents see tenancy as shameful and highlighted the increased feeling of safety through ownership. Other than in cities and adjacent villages, house renting is absent. Some stakeholders also insisted that other forces might negate renting in villages. A GOPP officer in Assiut, for example, referred to the low and uncertain incomes of those in temporary employment that leads families to prefer to own a low-quality house rather than face eviction if they are unable to pay the rent regularly.

These values and norms could be measured using the 2017 Assiut census that reported more than 29.8% of housing units were unoccupied (CAPMAS, 2017), perhaps reflecting construction in anticipation of family successors. Likewise, that 85% of the population live in an owner-occupied house, supports the position that renting is regarded as shameful. Even though values and norms articulate most individuals’ actions (Bürghi et al., 2004), cultural forces were not addressed in previous studies on Egypt’s unplanned housing (El-Hehawi, 2005; Hamdy et al., 2017; Osman et al., 2016a, 2016b, 2016c) nor the land use development plan (GOPP, 2009). We find that when the formal rules ignore or are indifferent to the cultural norms and values people tend to apply informal solutions to their land and housing needs (H2).

4.2.3. Economic forces

Land fragmentation (driven by large households and land succession) led to a situation in which some holdings are now less than 50 m². Since such micro landholdings cannot be farmed profitably, owners tend to sell them or change for their use. In this regard, an officer at an agricultural cooperative said:

“Many farmers who own a small plot, despaired of farming and changed the land use. Maybe by selling the land in the informal sector for residential use, or by using it for satisfying his own need for housing.”

This land fragmentation exists points to a failure of the land market and high input costs. Mohamed, a land broker in Assiut and El-Fath centers, explained the land market failure by saying:

“It is a game of supply and demand. When the government does not supply the market with enough land to be developed, which is always the case in Assiut, people tend to enter the informal sector. Due to the scarcity of formal land inside the Haiez of cities and villages in Assiut, land values in the formal sector are very high. In Assut city, the land value in the formal sector reaches 100,000 EP/m². Consequently, a large margin of farmers, who own lands in the city or village’s peripheral area, offers their agricultural land as a cheaper alternative where the land value is 3000 EP/m². The land value for a cultivated plot at the city’s peripheral area is ten times more than the plot’s land value with the same area and use but far from the built-up area. Based on my fifteen years’ experience, I think that the land has become a saving tool for many people, stimulating land demand. If the one has saved some money, he would then buy a plot on the periphery of the built-up area. (.) The land value rises between 20% and 40% annually. It is better than any other type of investment, no risk, and high profit.”

Based on all responses, it is clear that the agricultural sector’s status and agricultural land have played significant roles in driving unplanned growth in Assiut (GOPP, 2009). Most respondents clarified that high costs for agricultural inputs (Aboul Naga et al., 2017) and the micro land-holdings were the motives for many to stop farming and change land use. This is consistent with the 2015 Agricultural Census, which showed that 77.6% of Assiut holdings are less than one acre, representing 15% of the cultivated land (CAPMAS, 2016). These findings suggest that consolidating land tenure may be useful for tackling unplanned growth, though a land consolidation strategy should consider rural livelihoods and improved productivity.

Speculative investments in land inside the Haiez drive house seekers to the urban periphery and further increase pressures for unplanned growth. Moreover, such speculation may drive prices of land beyond the reaches of lower income households, forcing them to turn to the informal sector to satisfy their housing needs. For example, (Soliman, 2015) found that the value of agricultural land far from the urban cores was 10–15 times less than that found near to the cores. Following on from all that, stakeholders’ responses indicated that the economic hypothesis of “the high cost of formal housing leads to informality” is true for Assiut (H3).

The results of the in-depth interviews provide strong evidence to accept the three hypotheses formulated in Section 2, and we conclude that unplanned human settlement growth in the Nile Valley is driven by a mix of institutional and political, cultural, and economic forces.

4.3. Causal mechanisms

Based on our hypotheses, which were built on the institutional resource regime framework and the in-depth interviews with the stakeholders, the following causal mechanism that led to extensive unplanned growth between 1952 and 2020 was derived (Fig. 3).

4.3.1. The incoherent institutional land regime

4.3.1.1. The trigger force. Based on the hypothesis developed from the
in institutional land regime analysis, public policy, property use, and property rights were found to be the triggers for unplanned growth on agricultural land since 1952 via continuous agricultural land fragmentation. While some laws criminalized encroachments on agricultural land, others sought to regularize them while several attempts to relocate the growing population’s surplus outside the Nile Valley were unrealistic and therefore ineffective in redirecting land demand and settlement growth.

With the liberalization of agriculture also failing to preserve micro landholdings, coupled with the increased costs of agricultural inputs and decreased returns for micro-holders, there were strong incentives for smallholder farmers to cease cultivation. Even so, some farmers rented their land to others to escape the penalties for not cultivating it, while others continued to farm to (partially) support their families with basic crops (wheat and vegetables).

The stakeholder interviews showed that the public policies did not address the effect of values and norms (e.g., Ezawah) on the settlement growth processes that give rise to family-based clusters. Other cultural issues, such as ensuring family successors and shamefulness over renting, lead to unexploited residential units to meet current demand. In other words, residential units that were built for family successors stay empty because most people prefer not to rent.

4.3.1.1.1. Part 1: scarcity of land. Egypt’s incoherent land regime leads to a scarcity of affordable formal land for settlement growth. The combined failures of land and agricultural policies, spatial planning instruments for the Nile Valley and Delta and for the desert new towns, and the lack of a workable monitoring and enforcement system, combined with political clientelism and resource constraints open the door for practical, informal housing solutions that generate massive amounts of unplanned development throughout Assiut’s landscape. Though proximity to the built-up area and CBDs (compared to the mega-projects outside the valley) clearly encourages people to choose the agricultural land to build on (Sims and Abd-El Fattah, 2016), the driving forces are more numerous and the actual mechanisms more complex.

4.3.1.1.2. Part 2: informal institutions intervention. Stakeholder interviews showed that informal institutions overcame the legal constraints on unplanned settlement growth. The first is the Kahoul, who allows wealthy and respectful people to escape from any Judicial outcome. The second informal institution is Ezawah. As mentioned by a local public official (Section 3.2), the social/family bonds between officials and residents force many local public servants to cooperate with encroachers. The third informal institution is corruption. Many stakeholders agree that bribing public servants is a well-known method that helps facilitate unplanned growth. There are multiple mechanisms at play. Some public servants are known for such informal action, enabling encroachers to delay reporting until their building is finished. The police can also prevent building demolition based on a critical security analysis. The 2018 Agricultural Land Preservation Report showed that, between January 2011 and December 2017, more than 800,000 informal buildings were not demolished as a result of security concerns. Moreover, about 650,000 informal buildings could not be demolished because they were occupied (Saqr, 2018).

4.3.1.1.3. The outcome. The outcome of applying this mechanism has been approximately two million acres of unplanned growth on agricultural land between 1947 and 2020. This represents 35% of the agricultural land inside the Nile Valley and Delta region and 20% of Egypt’s total agricultural land, and the process is ongoing.

5. Conclusion

To understand why unplanned growth occurs in the Nile Valley, three hypotheses related to drivers of informal settlement growth in Assiut Governorate were investigated: (H1) considered the importance of an integrated institutional land regime for sustainable land use; (H2) considered the role of cultural norms and values; and (H3) considered the relative costs of informal and formal housing.

The institutional land regime in Assiut, Egypt, was found to be complex and incoherent. Since 1952, the land regime’s complexity has increased due to contradictions between land and property rights and public policies on agricultural land use and planning. The complexity and incoherence are significant reasons for massive unplanned settlement growth on agricultural land in the Nile Valley. In total, fifteen institutional and political driving forces (including weak law enforcement, ineffective housing strategy, lack of participation and transparency, corruption, and administrative fragmentation) for unplanned growth on agricultural land were identified confirming that the land regime is incoherent and does not support sustainable land use. Further, three cultural forces (Ezawah concept, the desire to provide for future generations and a sense of shame tied to renting) and eight economic forces (majorly micro-land holdings, the costs of agricultural inputs, escalating land values and land as savings) were also identified as important drivers of unplanned settlement growth.

The causal mechanism for unplanned settlement growth starts with the incoherent land regime that creates land scarcity. To fill in the demand gap, informal institutions come to the fore: the Kahoul (a paid stand-in), the Ezawah concept, and corruption override or circumvent the formal constraints, allowing unplanned settlement growth on agricultural land to continue more or less unfettered. However, we must acknowledge that our study faced some limitations, such as the inability to interview several key public officials and the lack of access to detailed documents describing possible future policy directions related to land and planning.

Nevertheless, our results suggest that the current national development plan (2052 Vision) may face similar setbacks as previous land and planning policies if the land regime’s complexity and incoherence are not adequately addressed. Also, more attention is needed for the informal institutions, local values and customs that could be significant obstacles to effective regulation of the development of agricultural land in the Nile Valley and Delta Region. While we think that these results could be generalized to other parts of the Nile Valley, or even beyond Egypt, more research is needed to reveal the land regime’s impact on tackling unplanned growth and informal institutions’ existence in other contexts. We also think that future research must analyze the 2052 Vision to find whether the same incoherence is at play or new policies and instruments are prepared to address the setbacks of the current policy.

Declarations of interest

none.
Annex 1: Political and institutional actors and their mandate

The Supreme Council of Planning and Urban Development.

Headed by the Prime Minister, The Supreme Council of Planning and Urban Development is responsible for developing the national goals for urban and rural development in Egypt. The council also coordinates between related governmental institutions for assisting in the implementation of development plans. This council has to approve all strategic and detailed plans for cities and villages.

Ministry of Housing, Utilities, and Urban Communities (MHUUC).

The management of urban and rural growth is the Ministry of Housing, Utilities, and Urban Communities. Under this Ministry, there are two institutions, the General Organization of Physical Planning (responsible for planning inside the Nile Valley and Delta region) and the New Urban Communities Authority (responsible for planning and managing new settlements). Any new plan for existing or new settlements must be approved by the Minister of Housing before the Supreme Council of Planning and Urban Development approves.

The General Organization of Physical Planning (GOPP) was established to plan and manage settlement growth in Egypt in 1973. Since 2008, the GOPP is responsible for monitoring, endorsing, and approving the strategic plans and the detailed plan for all cities and villages. Besides, developing the implementation mechanisms for strategic and detailed plans at all planning levels. Although there are seven regional offices, the central GOPP office must approve all plans (GOPP, 2020).

The New Urban Communities Authority.

This institution is responsible for planning, managing, and implementing hinterlands’ new settlements. It was established in 1979.

The Ministry of Local Development.

The Ministry of Local Development is responsible for implementing strategic and detailed plans through four local administrative units: the Governorate, Center, Local unit, and the district/village units. In each governorate, the head of the four levels is appointed by the state. The Governor is the head of the four local administrative units’ hierarchy.

The Local Popular Councils.

At each local administrative unit, there is a local popular council. Accordingly, there are four local popular councils, which should be democratically elected. Their mandate is to monitor the local administrative unit’s performance and approve and participate in developing the strategic plan. Between 1952 and 2011, the integrity of the election processes in Egypt was questionable. In 2011, all popular councils were dissolved for that reason. However, a new election has not been done until now (2021).

The Ministry of Agriculture and Land Reclamation.

Besides its responsibility for agricultural development and land reclamation, it is also responsible for approving the strategic and development plans for cities and villages. The Ministry of Agriculture also monitors any encroachment on agricultural land through its bodies at the local levels.

The Agriculture Cooperative.

The role of agriculture cooperatives changed over time. After 1952, it was responsible for monitoring the crop rotation schedules, allocating crop area, and delivering the subsidized agricultural inputs. In the 2000s, its mandate shrank to monitoring encroachments on agricultural land, support farmers with proper actions towards improving yields, and deliver them with the subsidized fertilizers.

The Ministry of Justice.

The Ministry of Justice is responsible for issuing verdicts regarding encroachments on agricultural land.

The Ministry of Interior.

The Ministry of Interior’s mandate is to apply the court’s verdicts regarding encroachments on agricultural land.
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