

A Framework for National Urban Policy-Making Evaluation Methodology: Challenges of Natural Resources Sustainability in Egypt

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Abstract The national urban policies (NUP) adopted by Egypt during the period from the sixties to the second decade of the 21st century failed to address the challenges of sustainable urban development (SUD), as a result of some orientations affecting the mechanisms of policy-making and planning decisions in Egyptian urban areas. One of the most affected policies is preserving natural resources (land - water), resulting in the loss of many of these resources. The research hence addressed repercussions of this problem on policy-making methodology to deduce its weaknesses and strengths, by adopting a critical analysis method within three stages; overview and analysis of the research problem, then assessed policy-making mechanisms and planning decisions within the framework of evaluation methods deduced from experiences. Finally, it proposed a framework to develop an evaluation methodology that can function as an adaptive tool for development issues and urban governance in Egypt.

Keywords National Urban Policies, Policy-Making, Agricultural Lands, Pollution of Water Resources

this concept differs from one state to another, within the framework of this, UN-Habitat provided a definition that includes various international concepts, so the research touched on a procedural concept of NUP due to its connection with a set of dimensions and influences, the most important of which is the political dimension and its impact on decision-making, developmental, spatial, and so on, which in turn affects the urban system.

Based on this concept, the research issue lies in the effectiveness of policy-making in dealing with urgent issues and challenges of SUD, especially concerning the preservation of natural resources, whose main axes are agricultural land and water, to achieve food and water security, and to ensure the stability and development of human settlements. Despite continued state attempts to narrow the gap between water resources and the increasing demand through water recycling, which accounts for 25% of current consumption, or to confront the issue of encroachments on agricultural lands, which peaked after the January 25, 2011 revolution, where the rates of loss of fertile agricultural lands reached in the period between (2011–2017) approximately 75.67 thousand acres and an average of 10.81 thousand acres [1]. However, it faces a growing deficit in water resources, and the problem of its qualitative and quantitative deterioration, in light of what urbanization poses to wasting such resources and their decreasing rates at exponential rates linked to urban growth and population growth, in addition to the difficulty of

1. Introduction

By monitoring and reading various studies, it was found that there is no clear and unified concept of the NUPs, as

reclamation of new lands and preparing them for agriculture as a result of the high costs that exceed 6 times the cost of reclaiming an acre of existing agricultural land.

From the above, the features of the problem and the importance of solving it as an urgent priority, require a continuous periodic evaluation of the NUP because it is one of the necessary policies to deal with the challenges of SUD.

Thus, the research problem lies in the lack of a clear methodology for evaluating national urban policy-making (NUP-making) within specific evaluation principles, with a comprehensive framework for the process as a whole and the long-term impact of the successive accumulation of policies on the sustainability of Egypt's (land - water) suppliers from the 1960s to the second decade of this century, and then it becomes clear that the importance of research is in supporting the NUP makers with a guiding evaluation guide to assessing the path of achieving policies and ensuring its commitment from one government to another and from one politician system to another to ensure that the desired goals are achieved without deviating from them, and how to evaluate the outcomes of the political process, starting with the policy adopted by the political decision-makers until it impacts on the sustainability of natural resources.

Hence, the research aims to develop a mechanism with a systematic framework for evaluating the process of NUP-making within the challenges of SUD.

2. Research Methodology

The research according to the general framework of research problem, as shown in Fig.1, adopted a methodology that went through basic stages based on research methods, tools, and materials, as follows:

The axis of overview and analysis of research issue uses the critical analysis method to study and extract the basic

procedural concepts of the research from the theoretical background of (NUP-making, SUD, urgent urban environmental issues, evaluation framework, and methodology).

The axis of extracting the foundations of the methodological framework for evaluation, whether from the product of theoretical ideas, or from previous experiences related to the evaluation of the NUP within the SUD, whether global (UN-Habitat Organization), or local (official reports that studied the Egyptian experience in NUP or evaluated the outcomes of its decision-making process), uses descriptive and deductive analytical methods.

The research issue is inferred with the critical and evaluative analysis approach to policy-making mechanisms and planning decisions within the framework of the deduced evaluation methodology from experiences, to extract the strengths and weaknesses of the NUP-making in the historically Egyptian case, in the manner of a desk survey of previous critical studies that evaluated their impacts on urbanism and the sustainability of natural resources (water - agricultural land).

The mechanism is developed for evaluating future policy making to suit the Egyptian situation.

The scientific material and the most important data and indicators were collected from primary and secondary sources through unofficial research bodies of civil society (academic/consulting centers, etc.), official government agencies (Egyptian laws regulating urbanization and the environment, Central Agency for Public Mobilization & Statistics (CAPMAS), Information and Decision Support Center (IDSC), the Ministry of Housing, Utilities and New Urban Communities (MHUC) and its related official bodies such as the Ministries of Water Resources and Irrigation, Agriculture and Environment, and finally international organizations (World Bank, United Nations, etc.).

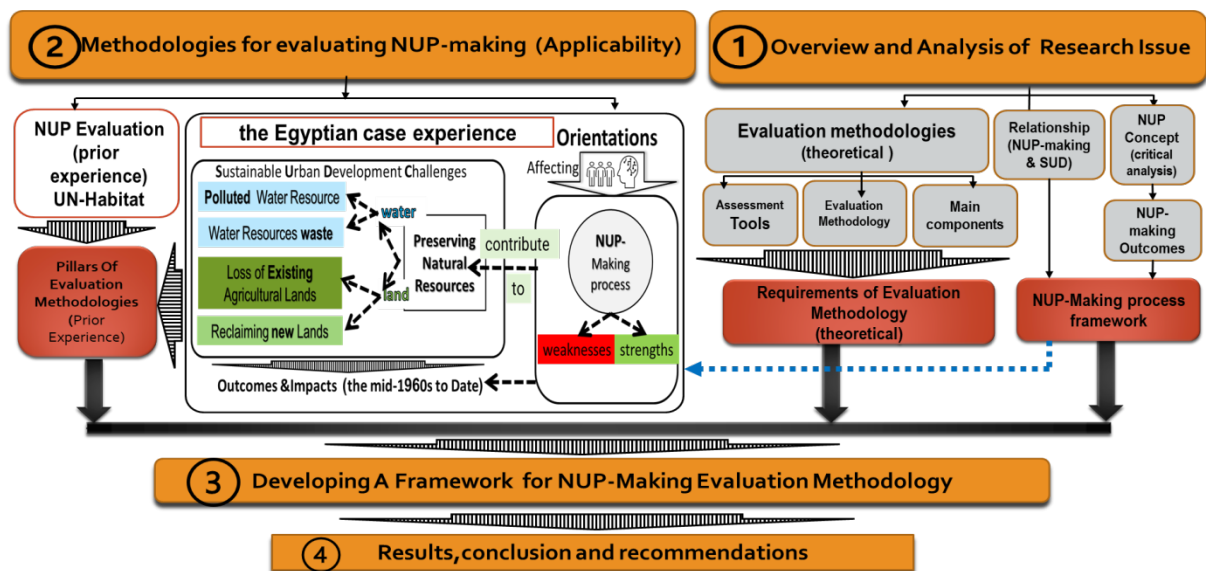


Figure 1. A general framework for research problem and Methodology

3. The Relationship between NUP-making and SUD

3.1. NUP Concept Definition (critical analytical view)

By revising the dimensions of multiple previous concepts of NUP, it was found that some of them focused on the spatial dimension, such as Richard's definition [2] related to the inter-distribution of the population (urban/rural) in a specific time scale, while the Arab Institute for Urban Development [3] focused on the exploitation of resources to achieve the goals of the required environmental dimension. While Den Berg et al. [4] referred to the role of the hierarchical governmental and administrative organizational structure oriented to cities, UN-Habitat [5], as an effective international organization, influences countries' internal policies, presented a definition in which it emphasizes the administrative aspects and political roles and actors included, and it has many names in different countries under one crucible called NUP. It is noted that their definitions focus on cities as a key element because, they

play an important role in national economic, social, and environmental performance.

Then the UN General Assembly (UNGA) [6] developed a more detailed definition in which it emphasizes the concept of NUP and its relationship with other development policies that complement it, in addition to the importance of the role of governments and other stakeholders in preparing for urban development by developing the necessary framework for it. But Wang [7], defined urban policy in the context of priority, disadvantaged urban areas that suffer from a gap in economic and social development, and recently in light of the updates to the building code promulgated by Law No. 119 of 2008, it included a simplified definition "the policy developed within the general policy of the state, aimed at directing relevant sectoral policies and urban plans at different levels" [8]. In addition to the necessity of linking the concept to public policy thought and its making process [9], to the comprehensive planning dimension according to hierarchical levels [10] and the developmental dimension is as shown in Fig. 2.

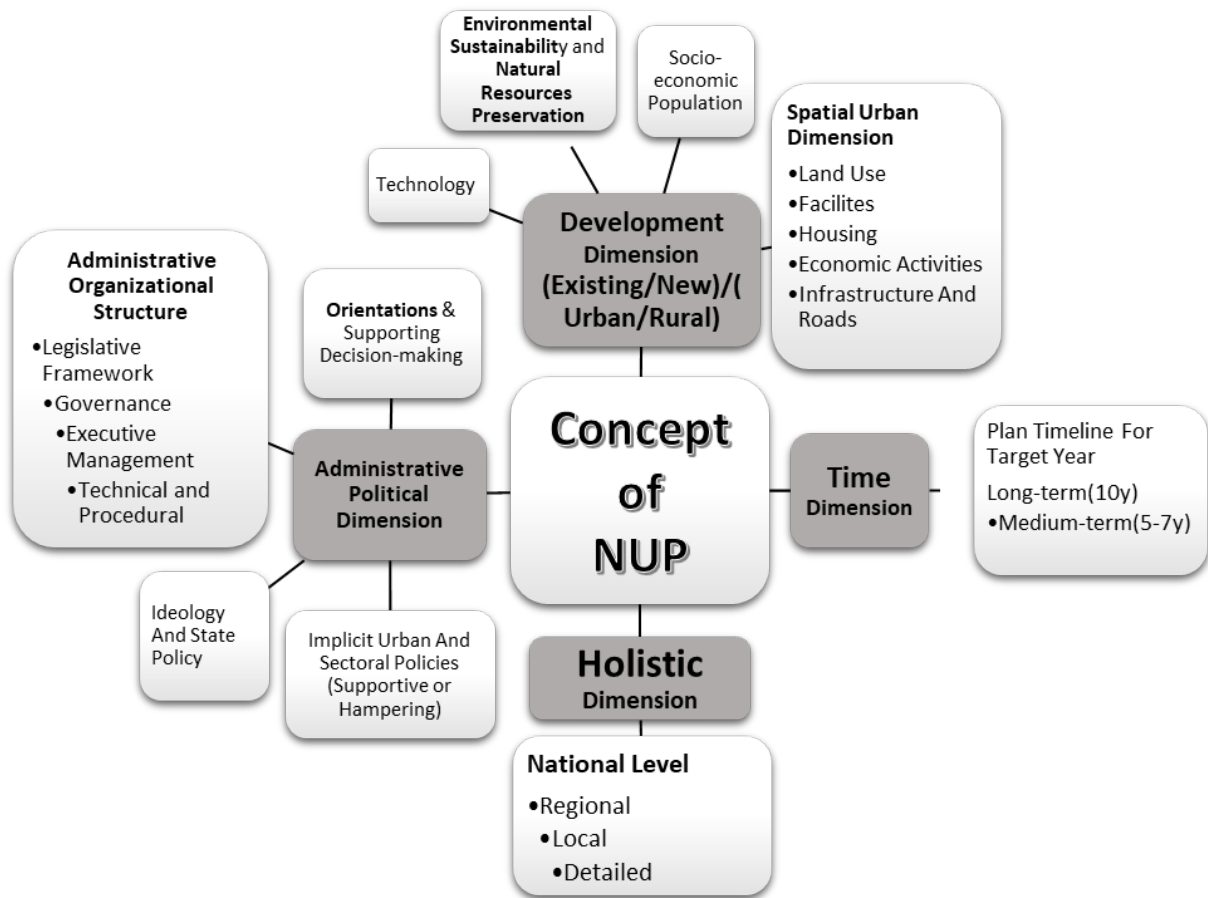


Figure 2. Concept of NUP

3.1.1. Main terminologies related to NUP

The concept of NUP is associated with a range of other concepts, including national goals: such as achieving equity in the distribution between individuals and regions, economic growth, and others, as well as the settlement system in the state concerned with the spatial and functional distribution of settlements, economic activity, population, facilities or service activities in the state, implicit urban policy: these are related sectoral development policies such as (industrialization/privatization / national housing policies/support for the poor community groups / rural policies/immigration controls and subsidies/infrastructure investments / administrative decentralization / local or regional government financial reform/policies economic, financial, etc.) and they serve as other tools that support policy and are integrated with it. The spatial urban development strategy (SUDS): "The art of exploiting resources and capabilities, which is a pattern of thinking toward achieving certain goals through a set of policies that can be implemented with multiple mechanisms in binding decisions" [11], capable of changing the course of development significantly [12] by determining the spatial and temporal scope appropriate specific plans and programs. Sustainable Urban Development (SUD): managing the urban development process by making optimal use of the available natural resources to meet the needs of the present generation without affecting the opportunities of future generations.

Based on the foregoing, the research reached a comprehensive objective definition of NUP, which is: "An essential element of the comprehensive development policy at the national level; it represents a coherent set of political decisions derived from a continuous and organized political process regarding (existing or potential future) issues and challenges in the areas of urbanization, and the dynamics and issues of polarization in the settlement structure(urban/rural/bedouin), (existing/new/proposed), which are decisions either to set national goals or decisions to determine the means to achieve those goals by acting on those issues by setting principles of political interventions and the vision for their implementation to promote sustainable, comprehensive and more transformative urban development. It is integrated with the implicit urban policies affecting the settlement system in the country, to result in a clear SUDS within the framework of (legislation, laws and administrative decisions), and implemented by the

government in the form of (executive work plans and programs), with effective coordination and mobilization of various actors within the framework of resource allocation and identification of parties and responsible institutions for a specific long-term period."

3.2. National Urban Policy-Making Framework

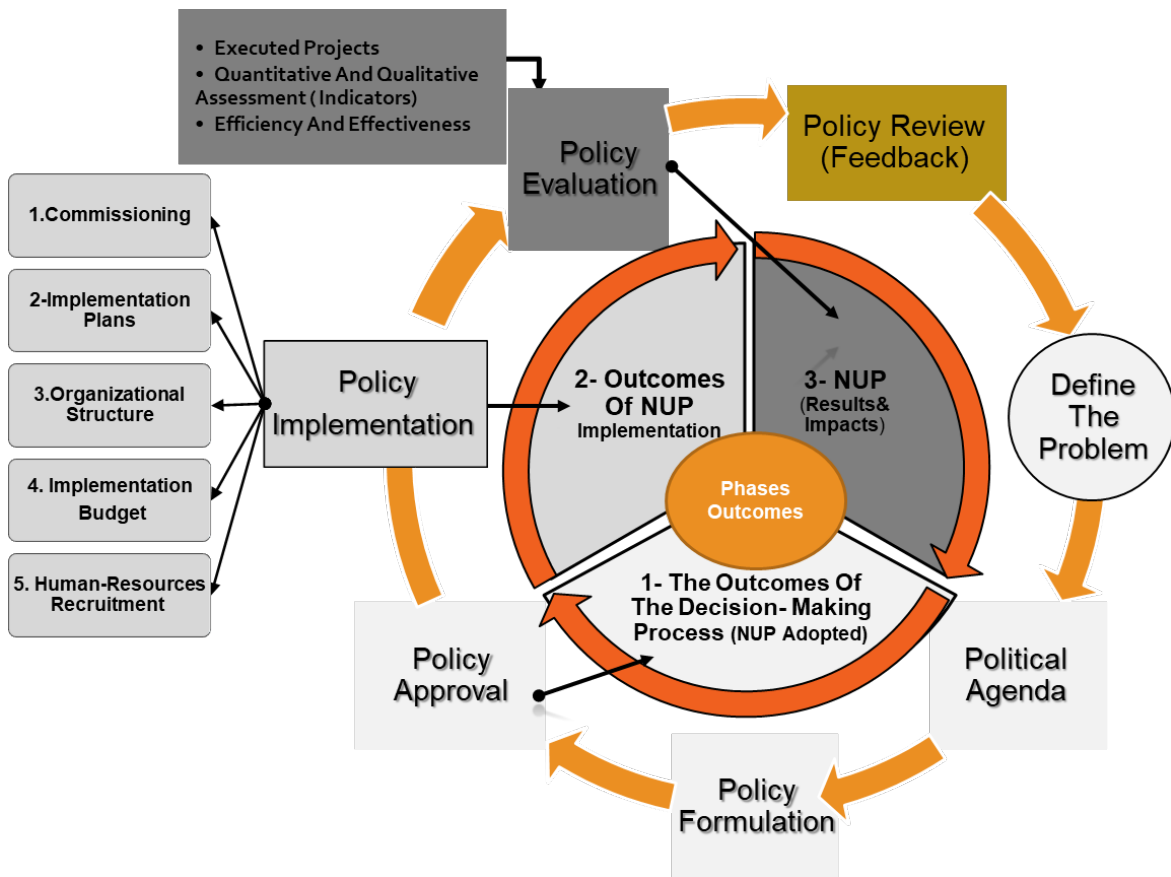
From the above, according to the policy concept, the process of NUP-making consists of inputs, activities, outputs, outcomes, and impacts. A policy framework is a structure that sets out a set of guidelines and procedures, which are used in decision-making to guide a more detailed set of policies, and ongoing maintenance of a policy-making process. Furthermore, it includes five basic Phases: 1 (problem definition), 2 (policy formulation), 3 (policy adoption), 4 (implementation), 5 (evaluation), [13,14]. According to UN-Habitat, the stages of the NUP-making process are divided into four basic categories: "diagnostic", "formulation", "implementation", and "monitoring and evaluation". "Diagnostic" is the first stage and refers to conducting the preliminary analysis to create a NUP, then "formulation" of the policy is being drafted, and "implementation" indicates the phase when the policy is being put into action. The final stage, "monitoring and evaluation", is the moment when outcomes of the policy are being analyzed and evaluated [15]. Therefore, Egypt's new NUP adopted the same stages in conformity with UN-Habitat framework, as shown in Fig. 3A,3B.

From the above, it is possible to define a procedural framework for dealing with the NUP-making process as a cycle of outcomes resulting from the stages of the political process, according to its main outcomes so that it is divided into three basic stages starting from the following: 1 "adopted a policy" according to the objectives and a specific issue, 2. "outcomes of the implementation phase". From (the entities in charge of implementation, the executive and detailed plans at various hierarchical levels, the administrative organizational structure, the financing budget, 3. "policy outcomes (results or impacts)" the appearance of its impacts (direct or indirect) (positive or negative) in reality, and sometimes these outputs may be orientations that define subsequent processes or stages that lead to various other outcomes (expected or unexpected), as shown in Fig.3C.

Stages of NUP	Tentative Outputs	Stages of NUP	Description
1. Feasibility study	Discussion Paper: • Need for an Egyptian NUP • Rapid assessment of Egyptian and international experience • Proposed policy strategic dimensions	1. Diagnosing	• Refers to The Period When The Country Is Conducting The Preliminary Analysis to create An NUP.
	2. Diagnosing the current situation		
3. Formulation of the NUP		NUP Interim & final reports/policy briefs: • Strategic issues • Scenarios and alternatives • Urban and sectoral strategies • Policy programs • Priority policy focuses	3. Implementation
	4. Implementation, Monitoring, and evaluation	Technical reports: • Policy programs, action plans • Monitoring and Evaluation manuals/guides	
			4. Monitoring and Evaluation

Part A. NUP (Egypt) [16]

Part B NUP (Habitat) [15]



Part C NUP (Public Policy Outcomes)

Figure 3. NUP-making process framework Part A, B, C

3.3. NUP Role in Sustainable Development (Land - Water)

Habitat III report noted the importance of the NUP's role in achieving the Sustainable Development Goals (SDGs) and preserving natural resources, as it is a key tool to achieve Goal 11 “, Make cities and human settlements inclusive, safe, resilient and sustainable” as well as the goal (11_a) by supporting positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning and emphasizing the effectiveness of the role of national governments and legislative authorities through consistent coordination between sectoral policies at the governmental highest level, in a way that supports sustainable and comprehensive urban expansion [16] It is linked to the two axes of research in Goal 2 related to the agricultural land resource “food security, nutrition and agriculture, where the relevant goals of land ownership security, the strengthening of rural-urban links, and the stability and prosperity of the agricultural sector allow containment and reduction of many negative phenomena such as rural-urban migration and so on. It entails complexities and social problems, and goal 6 is related to water resources “access to clean drinking water and sanitation”. The World Bank has also stressed the need for political and leadership commitment, in light of technological innovations, to provide services and financing to governments to achieve the target (6.2) of the (SDGs) appropriately sufficient, and equitable by 2030, as shown in Fig.4.

3.4. SUDS (Land and Water Sustainability)

In light of the relationship described in advance and the context of UN Habitat's focus on the urban sector; Given the dynamics of rural population growth and the current constraints on agricultural and water resources, land cannot absorb the growth of the rural population, so it can be absorbed only in existing or new cities, sometimes reflecting positively on raising rural living standards by reducing the decline in agricultural employment and stimulating increased agricultural productivity. Additionally, the investment infusion in urban and rural areas is an important complementary source of rural income. This affects the principle of preserving agricultural land and reducing the pressure on the population and urban growth (clean water supply, sewage disposal, solid waste disposal, existing agricultural land, etc.). As a result, many developing countries have adopted some SUDSs that are implicitly linked to those objectives, including "Strategy for developing small service centers in the lower levels of urban hierarchy". The urgent issue and its dimensions were identified and resolved by creating attractive rural conditions for the rural population so that, they had no incentive to migrate to the city. The implementation mechanisms were to strengthen the role of urban centers in providing urban services to the rural population and employment opportunities in (small industries, agro-based industry, urban services, and informal sectors), and to disseminate community change and technical knowledge in rural areas.



Figure 4. Potential of NUPs for SDGs (UN-Habitat) [2]

This strategy has the disadvantage of focusing its priorities on the development of the rural sector, which is unable to resolve all urban issues, while being characterized as the easiest way to increase rural income and well-being in absorbing the rural surplus in large cities, although the cost of absorbing all the excess is high, small service centers can be partially effective at best.

Additionally, the Secondary Cities Strategy includes attempts to strengthen rural-urban linkages by developing agro-based industries and the expansion of agricultural input production based on high-level service centers for remote rural areas surroundings. In light of equal attention to infrastructure (water supply, sanitation), other sectoral services (health and social services, etc.), and industrial infrastructure, what distinguishes it is the attention to supportive implicit urban policies that also stimulate the economic development of these societies [17].

This does not mean that the rest of the strategies that have been applied in states are ineffective but rather can be integrated into policy formulation and adoption as preferred solutions, without the bias of policymakers to adopt a single strategy such as the development strategy of establishing new urban communities, a focus strategy in major cities, or a focus solely on the agricultural sector. All alternatives to SUDS should be considered when formulating the NUP and considered as the main work items in the NUP-making process and the framework of evaluation methodology.

4. Evaluation Methodologies and Their Applicability

The basis for the success of the policy-making process is the continuous evaluation of all stages of the public policy cycle, from preparation, implementation, results, and effects, to an objective evaluation mechanism organized for the NUP-making, which requires

First, identifying the basic components of the methodology, including (methodology/evaluation methods/evaluation criteria/evaluators from Experts and specialists / the resident / the required material, financial and informational means/time and place) [18].

Second, the preparation for the methodology occurs in four general main steps:

- 1) Establish evaluation guidelines specifying both (the purpose of the policy and evaluation, evaluation requirements, and the content of the evaluation report).
- 2) Design the methodology based on (inventory and classification of potential standards and determining the relative weight of each standard, its measurement indicators, and measurement evidence).
- 3) Gather and analyze evidence to document strengths and areas for improvement, and appropriately identify feedback at different stages.
- 4) Report results for the evaluation as a whole, using the results of Step 1 as a guide, analyze the performance, strengths, and weaknesses of the policy and its outputs

as a whole, and then review the previous evidence and criteria [13].

Third, identifying the stages of the framework in the evaluation methodology, which is the NUP-making process framework, which was previously concluded, and the approach to the following stages of the policy analysis process: 1) Defining the problem: it begins with problem identification (to find out the extent of its urgency at the present or in the future), diagnosing the problem (what special problems must prevail and need to be dealt with), magnitude of the problem (quantitative estimation of the size of the problem and its urgency and degree [13]. Evidence-gathering: an important step and the beginning of a way to suggest alternatives to possible solutions. It is either used to assess the nature and degree of the problem that has been previously defined or to evaluate the characteristics of the situation being studied in terms of budgets and ideologies of primary stakeholders and so on, or to evaluate the legislated policies in similar cases in other locations or times. This step is done based on a literature review from reliable sources and unbiased legitimate data, surveys by experts to discover people's perceptions about the problem, and potential alternatives to policies. 2) Building alternatives: adopting an appropriate definition of the problem and specific to the possibility of translating it into actions, then the appropriate weighting criteria are selected by analyzing each option and selecting the preferred one. Examples of evaluation criteria are efficiency, effectiveness, equity, the feasibility of (policy, management, Technology.) social acceptance, sustainability, etc. The potential criteria vary or increase according to the definition of the problem and the objectives to be achieved. Then it is followed by the expectation of the results of the alternatives and the exclusion of what does not achieve the desired results and effects. 3) Decision-making: reaching this stage means that an objective and systematic analysis has been given to convincing recommendations based on evidence and evaluation criteria.

Undoubtedly, policy analysis is a powerful tool to mitigate public policy problems [13], but it is applied to one specific policy and requires expanded capabilities that are difficult to absorb, while the research is finding a mechanism to evaluate the outcomes of successive policies and their accumulations and track their tracks, so by looking at the previous studies demonstrated the difficulty of containing the evaluative process of NUP-making; because it requires wide capabilities and the contribution of many parties, researchers, analysts, and others, tasks that are difficult to overcome in research. Therefore, using the (checklist assessment tool) as one of the requirements of the assessment methodology framework, as a working guide for the policy self-assessment and its outputs, based on items provided with examples for follow-up, interim activities during policy-making until its final results; it aims to verify whether it has been performed or not. It also contains a rating scale to assess the specific elements of what is being evaluated, and it is measured either by binary estimates

such as (true, false) [23] or estimates with relative weights, knowing that some elements in the checklist may not be appropriate. For all cases, the checklist should be used with some flexibility [19]. It is characterized by its ease of preparation and use, its direct link to the task elements, and its effectiveness in the method of self-evaluation. It provides limited information about what can be done to improve performance, while its flaws are levels of performance quality.

4.1. NUP Evaluation Methodology (Prior Experience)

UN-Habitat has adopted a framework for the NUP assessment methodology, which evaluated and monitored the progress of policy development and implementation in States, according to criteria: a) population dynamics response, b) balanced regional development, and c) strengthening domestic fiscal space. Policies have been reviewed to ensure that they consistently cover the three qualifications mentioned, while these qualifications are recorded and documented as steps. For example, zeros are marked in countries that are not adopting or currently developing NUP. This was done using five scoring categories for each qualifier to maintain objectivity and comparisons during policy analysis. These categories are a step-by-step assessment of the extent to which elements that contribute to the attainment of each qualification are incorporated into national and regional strategies and plans. They are separate lists. Each list includes a category in which the characteristics of the policy developed by the State are defined. The percentage of each category is as follows: Category I: 0 %/Category II: One to 25 percent/Category III: 26 to 50 percent/Category IV: 51 to 75 percent/Category V: 76 to 100 percent.

The evaluator then sets a number based on the category that recognizes the qualification being analyzed, knowing that only one category will be determined for each qualification. A large number of evaluators then conduct an independent assessment of the policy to avoid bias throughout the assessment process, and after the evaluators have assessed each of the three qualifications, the final average value of the indicator is calculated. Based on the final score, countries falling into the second and third categories, which meet qualifications from 1 to 50 percent, are not counted among the countries in the first category, however, are encouraged to make efforts to improve their NUP or development plans. While countries in categories IV and V, i.e., those meeting qualifications of 51 percent or more, are considered in the assessment to be part of countries developing and implementing a NUP or regional development plan and contributing to its realization of target 11.1. countries that are among those adopting NUPs or regional development plans can make efforts in Way to improve their classification in terms of compliance with the three qualifications. This NUP evaluation methodology was used as a useful experience in the proposed framework.

4.2. Egyptian Case Study

The study was built based on specific time intervals according to the previously concluded procedural framework for policy-making, and accordingly, a descriptive analysis was done for each period; to examine drawbacks in the Egyptian case, it can be explained as follows:

The different political ideologies of the state, periods of booms in global or local influences the political and economic situation in Egypt. International organizations orientation (United Nations, FAO, World Bank, OECD). (National projects / October Paper / Egypt NUP study 1982 / Development and Reconstruction Plan 1997 / National Strategic Plan 2050, 2052 / Egypt Vision 2030 / NUP 2019 /laws and legislation / political decisions).

The range of periods to show the outputs on the Egyptian ground after the accumulation of 20 years of implementation and the beginning of the policies or directions approach, and the availability of studies and critical research on the outputs of the NUP Availability of censuses according to the indicators and data of the Central Agency for Mobilization and Statistics (development of urban and population growth rates/development of the existing or reclaimed agricultural area / agricultural property / per capita water rate).

4.2.1. The 1960s (1953 –1970) AD

After the revolution of July 1952, socialist thought prevailed based on the state's guarantee and dominance over all product and service sectors [20]. Therefore, the state focused on its national priorities on (1) attention to food security by increasing production, and secondly solving the problem of population explosion in the Nile Valley and the Delta [21], because the UN, since 1951 AD, has spread the idea of urban development globally, and presented the idea of new cities as one of the most important patterns of spatial development, as a solution to address national, regional and strategic issues; to absorb the population increase, expanding the agricultural area, and then achieving Food Security [21]. Therefore, Egypt implemented several major national projects within the framework of benefiting from the water resource of the High Dam and the Suez Canal. It adopted a policy of land reclamation by establishing it in the east of the canal, and the strategy of developing new urban communities in the desert, including cities in the New Valley and New Nubia, and establishing small-scale rural economic units

4.2.2. The 1970s–1981 CE

Following the war in October 1973, within socialist thought, the government adopted a policy of reconstruction. The October 1974 paper presented a comprehensive vision of the broad lines of social and economic development adopted by the state at this stage, including the need to set up new societies to settle the population and industrial and agricultural activities, especially in desert areas. [22] It also

approved the policy of economic openness to open the field of Arab and foreign investment, provided that the public sector represents the executive tool for any development plan, and the charter was for the state to accept unconditional foreign aid, loans, and direct investment in areas that require global expertise in the areas of modern development and focus on industrialization. Horizontal expansion in agriculture and reclamation to achieve security, and the preparation of a new urban map for Egypt by extending urbanization in the rest of Egypt's regions by establishing new cities [23]

4.2.3. The eighties –the millennium (1981–2011 AD)

Capitalist thought and the free market prevailed, and the state followed the policy of economic reform, gave more space to the activity of the private sector and reduced its role in many areas of production and services [20], and achieved its national goals and confronted its urgent issues of raising the rate of economic growth, protecting agricultural lands from urban sprawl, and invading the desert by increasing the urban area from 5% to 25%, accommodating the population increase and improving the living standards of the population (where the state supports the needs of low-income groups while providing facilities to the private sector to meet the needs of the rest of the groups), the state has adopted several national projects, including the “Toshka Project” [24], and development and reconstruction project of central and northern Sinai. While the two studies “NUPs 1982” and “French Institute Study 1983” were conducted in cooperation with the American Agency, and the second generation of dependent and twin cities was established for the provincial cities [25], new legislation was also enacted to control urbanization and fine violators in support of its policy, including the amendment

of Agriculture Law No. 116 of 1983, Urban Planning Law No. 3 of 1982, Law No. 143/1981, Concerning Desert Land, Environmental Law No. 4 of 1994

In 2001, the Ministry was commissioned by the Council of Ministers to prepare the indicative urban plan for all villages of the delta (563 villages) in coordination with the ministries of agriculture and local development.

Following the same legislative and executive mechanisms, adopted urban policies have resulted in all villages exceeding their urban boundaries, and perhaps the most important factors of their continued failure are the time of modernization and implementation, the lack of an updated database, and the shortcomings of local administrations with control procedures and legal follow-up [26]. Land reclamation projects and the Toshka project also failed as a result of factors related to financing and the extent of its sources, the pressure of stakeholders on decision-makers with the patronage system, and environmental factors such as the lack of water resources [22] and the exposure of land and water to desertification and soil qualities that are not capable of reclamation in reality.

4.2.4. The Millennium Transition (2011–2014)

This period was characterized by political and economic instability, and the 2012 constitution ignored pressing issues such as slums, sustainable development, (food - water) security, and insecurity resulting in encroachments on fertile agricultural lands, amounting to about 55.16 thousand acres [1], in addition to the suspension of the Toshka project and the state incurred financial losses amounting to for 6 billion pounds, as shown in Fig.5A. Evolution of farmland loss[27]

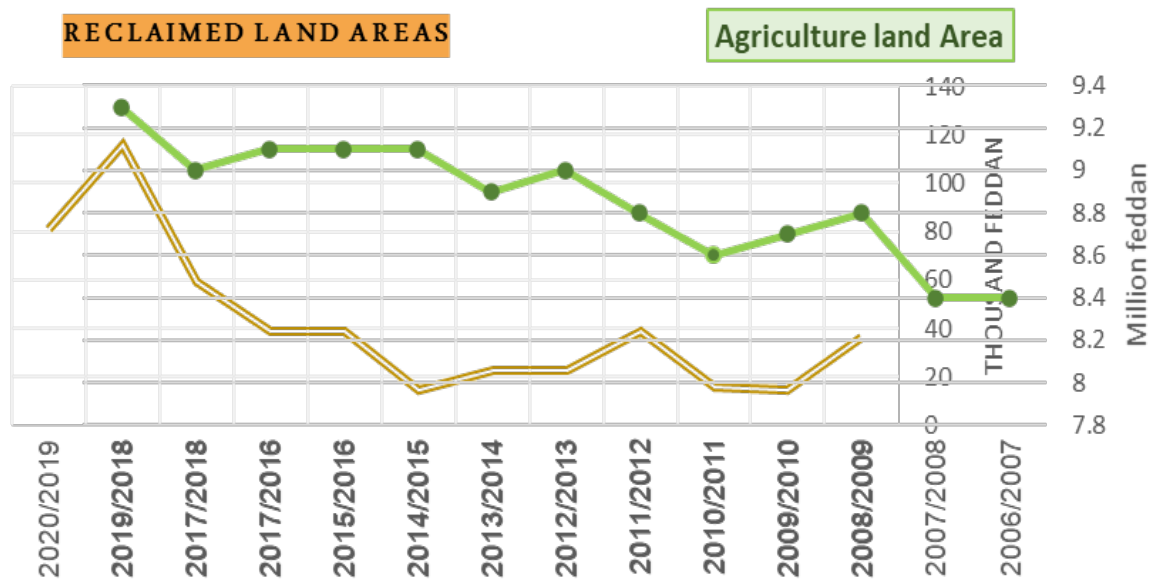


Figure 5. Evolution of reclaimed and farmland Part A

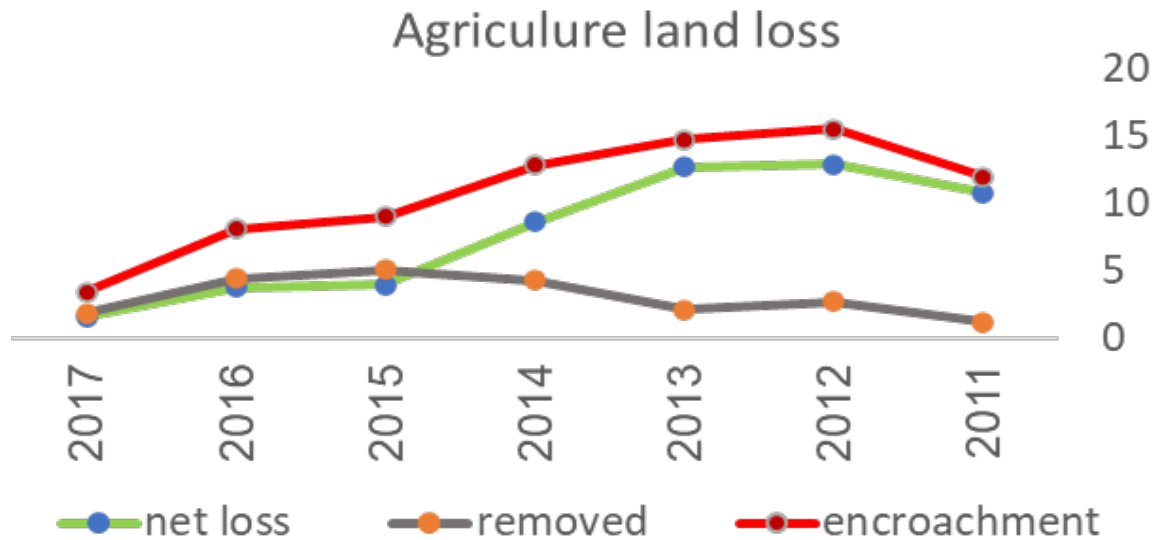


Figure 5. Evolution of farmland loss Part B

4.2.5. Era from 2014 to date

Under Vision 2030, Egypt has adopted several development policies, including the launch of the New Delta National Project on flat 1.5 million acres to compensate for the loss of existing agricultural lands from over-construction, and despite the recent years of international conflicts on the issue of the Renaissance Dam over Egypt's share of the Nile Basin waters, the issue of water security in Egypt is exacerbated by the excessive pollution of water, as according to World Bank statistics, the per capita share of clean water in Egypt decreased in 2018 to about 550 m³ per year, and it is expected to reach approximately 330 m³ / year in 2050, which means less than 1 m³ / day. Due to its intensive water consumption in the Egyptian desert, it can impair the success of land reclamation policies. Experts also agreed that the Nile region and Egypt, in particular, will experience further warming and thus an increased need for irrigation. Moreover, sea-level rise will put pressure on agriculture and water resources in the Nile Delta, which is home to more than 35 million people and provides 63% of Egypt's agricultural production [28], because the environmental flows of the Nile are already very limited, contributing to salinization. The delta makes it more vulnerable to seawater intrusion with adverse impacts on agricultural productivity and local water resources. All of them will likely exacerbate the water and food security crisis and its impact on the urban system in the future, without conducting a strategic environmental assessment for such new projects due to the economic losses incurred by the previous projects without achieving the desired goals [1].

The state also launched two presidential initiatives as part of the national project for Egyptian rural development; "Decent Life" and "Canal Lining" on January 2, 2019. It assigned a budget of around 112 million Egyptian pounds to provide drinking water services, groundwater drilling, and

construction of water purification plants. Neither of the two projects was included in the first phase of the new NUP "2019", and hence there was no adequate legislative framework to identify the appropriate policies for dealing with water sources to ensure their sustainability [29]. Instead, their implementation started four years before updating the urban plans of the Egyptian villages in 2022. This shows the lack of integration between the national water and agricultural strategies and the current NUP. However, the state attempted to tackle informal urban sprawl on agricultural lands, riverbanks, and state-owned lands through adequate political and implementation mechanisms like the Reconciliation Law 2019 for building violations, and various incentives for citizens who sustain their lands.

From the foregoing historical descriptive-analytical presentation, the drawbacks in the different phases of NUP-making in Egypt are evident, starting with the definition and accurate diagnosis of (water and food) security issues within their close interrelationship, then by reviewing the outcomes of the policy formulation stage some work items that were not taken into account such as possible scenarios for alternative solutions, for example in the event of climate change or the situation, the political entry into the country and its external conflicts, the impact of ideological thought and decision-making guidelines and the extent of the seriousness of applying laws to achieve the desired goals, and in the implementation phase (effectiveness of the adopted mechanisms, benefiting from research studies prepared by government agencies at the hands of specialized experts such as NUP1982, speed in preparing plans and follow-up). Finally, the impacts resulting from the previously adopted policies and the feasibility of adopting them must be evaluated later, as shown in table 1. According to the frequency of the emergence of drawbacks of (NUP-making) in different periods in Egypt case study,

so they would be highlighted in the proposed framework to be evaluated carefully and to be considered in future NUPs.

5. Final Proposed Methodology

The Framework of proposed methodology is based on the following pillars: 1) The NUP-making framework and its main phases, filled with work items such as developing

alternatives of SUDSs. 2) Basic requirements of evaluation methodology (evaluation methods, tools, main actors, criteria, etc.) concluded from the theoretical study of evaluation methodology. 3) NUP-making weaknesses points concluded from studying past Egypt experiences. 4) All are organized in order and classified according to the main stage of the NUP-making process using the checklist tool for assessment, as shown in table 2.

Table 1. Drawbacks of (NUP-making in Egypt) in different periods

NUP-making Process (Outcomes)	Main Phases Outcomes	Egypt NUP-making (Drawbacks) In Time Periods	
1- Decision-Making Process (NUP Adopted)	1. Problem Identification 2. Political Agenda 3. Policy Formulation 4. Policy adoption (Law)	A. Identify Problem Accurately	1/11A/14A 1/11B 1/11D 1/13A 1/13B 1/2/3 1/2/3 1/3C 1/2/3
		B. Scenario (Problem)	
		C. Affected Group	
		D. Same Adopted NUP (selected SDUSs)	
		E. Supporting Implicit Urban Policies	
		F. Synchronization	
		G. Phase Time	
		H. Initiative Not Within NUP	
		I. Evaluation Techniques	
		J. Orientations Influencing NUP	
Phase evaluation		K. Time (Synchronization)	
2- NUP Implementation	1. Commissioning 2. Implementation Plans 3. Organizational Structure 4. Implementation Budget 5. Human-Resources Recruitment	L. Coordination /co-operation Mechanisms	1/2/3 22ML 1/2/3 2/24A
		M. Neglected Previous Studies (NUP 82/Plan)	
		N. Coordination mechanisms Failure	
		O. Unsustainable	
		P. Neglected evaluation studies	
3- NUP (Results& Impacts)	1. Monitoring /follow-up /evaluation (Quantitative & Qualitative Indicators)	Q. NUP Failure (SUDSs)	1/2/3/4
		R. Not effective implementation mechanisms	
4-Policy Review (Feedback)		S. Not all cumulative outcomes/impacts	4T

Notes:

*Spatial Urban Development Strategies (SUDSs)

* Numbers refer to Phases in column 1,2

* Letters refer to drawbacks in column 3

Table 2. Framework of NUP-making Evaluation Methodology (Assessment checklist tool)

NUP-making Outcomes Phases	►Inputs	Policy-making stages & Work Items	policy analysis (Ask questions)	Main requirements of each phase.	Environments of the political system & orientations							
	Evidence and Requirements				International	Sociodemographic	Political	Organizational Institutional	Economic	Technology	Urban	
1- The Outcomes of Decision- Making Process (NUP Adopted)	Extensive Survey / Updated, Valid, and Accurate Database/ Mobilizing Public Opinion / Media and Marketing	Defining the problem	1. Problem Identification 2. Problem Diagnosis 3. Problem Magnitude	What? (Issue or challenges) What? Objectives Who or which? (Targeted or affected groups)	<ul style="list-style-type: none"> Identify Appropriate evaluation methods according to the interim outcomes Identify evaluators Main Actors Period 	Classification of a list of evaluation criteria for outcomes Steps: 1. Identify sets of influencing aspects and orientations 2. Identify evaluation criteria and sub-criteria 3. Identify relative weights of the evaluation criteria and sub-criteria According to (National Goals, State circumstances, Main National Issues, and Challenges of SUD) 4. Set Quantitative and qualitative assessment indicators 5. Determine work items priorities according to step3 6. Checklist of work items based on what was done or not.						
		Political Agenda	priority and urgent issues	..								
		Policy Formulation	1. Developing alternatives and options SUDS 2. Sensing the presence of a Problem 3. Understanding the Presence of the Problem 4. Defining the problem 5. Classification and analysis of information and data 6. Following-up and monitoring phase 7. decision-making stage 8. Trading-off between alternatives 9. Feedback	<ul style="list-style-type: none"> what predicted scenarios? .. 								
		Policy Adoption	legislative framework									

Table 2 Continued

Phase 1 Evaluation Review (Feedback)						
2- Outcomes of NUP Implementation		Policy Implementation	<ol style="list-style-type: none"> 1. Commissioning 2. Implementation Plans 3. Organizational Structure 4. Budgeting 5. Human-Resources Recruitment 	Check outcomes How effective? If they are in correlation With prior stage outcomes or not?		
Phase 2 Evaluation Review (Feedback)						
3- NUP (Results & Impacts)		Policy Evaluation	Quantitative and qualitative assessment (indicators)	Projects evaluation Efficiency And Effectiveness		
Policy Review (Feedback)						

6. Results

This section summarises and discusses the main findings of the work. First it came to a comprehensive definition of the concept of NUP in the light of understanding its various dimensions, to be used in the future NUP and to be included in the amendments of legislative frameworks, which is what the UN-Habitat recommended in its evaluation of international policies by setting a clear definition of NUP according to the specifics of each country, where the concept is linked to development dimensions political, administrative, comprehensive planning levels are hierarchical, and the NUP must include a comprehensive vision for all Egyptian lands, national urban projects in infrastructure and land reclamation. Additionally, the research proved the connection of the NUP concept with all urban and surrounding areas, rural and nomadic ones, which is reflected in the need to include rural and other areas within the major urban areas, due to the importance of these links that transcend those areas. The NUP-making should focus on this issue, particularly concerning infrastructure development and management of ecosystem services (particularly the SDGs related to land and water). Moreover, due to the high pace of urbanization in the country, it depends on the dynamics of urbanization and the urban sprawl caused by rural exclusion factors or urban attractions. Therefore, implicit urban policies play a fundamental and necessary role, concurrent with the NUP, to ensure the success of the political process.

However, the NUP-making process sequences in basic stages were reached by analyzing the previous literature on public policy as one of them, as it includes (inputs, activities, outputs, outcomes, and impacts.) for each stage, by referring to policy-making methodologies in the study The UN-Habitat and framework for its preparation in Egypt, the research reached a basic framework as a requirement of proposed evaluation methodology, by using a checklist assessment tool, based on the work items of policy-making stages, the evaluation requirements (criteria, methods, and tools, etc.), and the classification of criteria according to the local existing conditions. Finally, the strengths and weaknesses inferred from the Egyptian case study were outlined in order to evaluate and review the policy.

By deducing the NUP-making drawbacks according to the most important indicators that were monitored in Egyptian case, identifying the most visible weaknesses in the different time stages, to be an entrance to give relative weights to the criteria and the most influential variables, for example, the work item definition of the issue or the concept of NUP was missing in the laws or legislative frameworks without clarifying their dimensions and the groups affected or affected by them, also the drawbacks in financing process and its sustainability were repeated in the implementation phase of the policy and were affected either by different ideologies and the political system of the state or by the decision-making directives of the owners interests

and others, in addition to the policy formulation stage weakness point which appeared in the 80's and 60's, where the state adopted the same policy (new urban communities development strategy) as a solution to many urgent issues without paying attention to its impact on water and food security in a scientific manner, without referring to academic studies and research which was concerned with evaluating such policies previously, or what was concerned with preparing the NUP, such as the study of NUP1982, either influenced by the bias of policy makers to one policy alone, or pressures from international organizations. Deficiencies appeared in the implementation of the policy in the executive plans clause by following the policy of urban boundaries to preserve agricultural lands and following it again without achieving its goal, in addition to the shortcomings in institutional coordination in the administrative organizational structure and the timeframe for implementation, which led to the failure of the policy, and other examples that are evident in the impact of the terms and stages of policymaking by a set of orientations that lead to the failure of the adopted policies

Testing the proposed evaluation methodology on the new Egyptian NUP

Urban planning occupies an essential role in the NUP-making process and developing a comprehensive planning vision for national development in the country. According to the concept that was stipulated in the research, the first stages of policy-making require that it be governed by participating actors, top of which are urban planners who are politically and administratively savvy and familiar with the dimensions and objectives of SDGs, who are adaptive to the country's political ideology and its environmental conditions (politically, economically, socially, geographically, etc.).

By a brief test of the proposed evaluation methodology, through research on the new NUP for Egypt, the two phases of feasibility preparation and diagnosis were adopted, and it is currently in the stage of final formulation of the policy before its approval in a legal framework, i.e., with a rapid assessment of what was done in the stage of political decision-making outcomes (adopted policy) as follows :

- **The stage of defining the problem:** when limiting the problem, which was called the feasibility studies of the policy in light of the evaluation of the prior Egyptian experiences, it was necessary first when developing the concept of the NUP according to the Egyptian state that it be comprehensive as it was concluded in the research, and that the main goal of the NUP should not be based only on supporting the sustainability of Egyptian cities only as an environmental dimension, and to enhance their resilience in the face of dangers, natural disasters, and climatic changes, while more than half of the Egyptian population live in the countryside. So, it was necessary to refer to the sustainability of rural settlements as a category

affected and directly and indirectly affecting the sustainability of natural resources (land agricultural and water), as previously explained in the research.

- **Problem diagnosis:** called the stage of diagnosing the current situation, concluded with the main issues falling within five strategic axes, and by studying it means a group of ministries that lack the participation of the most important ministries concerned with the environment, agriculture, land reclamation or water resources and irrigation, whose national strategies represent an essential part with the NUP to achieve food and water security as an issue urgency and challenges to be dealt with.
- **The problem magnitude item:** the study made quantitative and qualitative assessments of the issues of the dynamics of accelerating urbanization and its impact on the high proportion of the population of villages working in urban professions, which creates challenges to confront urban inflation and the productive functional repercussions of those villages, without considering them as strong indicators that reflect the rural abandonment of the population and the deterioration of its conditions, which negatively affects the agricultural activity of the population and the preservation of their agricultural lands as a rare natural resource.
- **The stage of setting political agenda:** the study did not shed light on the issues of water and food security and the need to escalate them as a priority for discussion as national security issues in the political agenda of the state, as it is an important outcome from the previous stage that calls for the concerted efforts of all the state and the relevant ministries.
- **Policy formulation stage:** It is currently being completed and not yet approved, in which many main and subsidiary policies have been developed to confront the challenges of SUD, but in the form of recommendations and proposed policies and not in the form of executive mechanisms with implicit urban policies and political decisions, despite its study of the aspects of previous policies failure to adopt effective implementation mechanisms, as it neither predicted scenarios for future in the event of development intervention or not, nor defined policy alternatives and priorities per the urgent state issues and the dimensions of sustainable development.

Evaluation of the new NUP-making in facing the challenges of SUD and the feasibility of newly established cities

Despite the guidelines set out by the new NUP in its study of feasibility preparation, within pre-assessment of policies, related to the environmental risks of water pollution and land loss as a result of rapid urban sprawl, the ineffectiveness of focusing on investments or financial incentives for isolated new growth centers or the

establishment of new cities, in addition to the failure of reclamation projects in achieving the goal of expanding the populated areas and limiting the erosion of agricultural lands, as it noted the imbalances resulting from the government's continuous unsuccessful interventions on the wasteful consumption of land, however, it did not address it during the formulation stage of the policy, although the basis of New or smart cities inception and development depends on land and water suppliers, the priorities of policy alternatives should be considered in light of the country's exposure to political conflicts over water, climate change, and the risks of desertification, drought and others, which will affect the success of national projects such as the reclamation of the new delta, and the proposed new and smart cities, and lining the canals. It did not pay attention to the importance of coordinating with the concerned ministries (agriculture, irrigation, environment) and achieving integration between their strategies to ensure the sustainability of resources. This is evident in the assessment of the compatibility of the current goals of the new NUP with those of sustainable development, as shown in Table 3.

Finally, the evaluation process of NUP-making is difficult to include in the research because it needs accurate information and evaluation methods and a great effort from many parties, researchers, analysts, and others, which are tasks that are difficult to address in the research. Therefore, the (Assessment checklist tool) was applied within the analysis of the development of policies and their outcomes in the period from 1960 to date, research concluded that when developing a methodological frame of reference for evaluating the future NUP, it is necessary to include basic elements in its composition, the most important of which is the conceptual framework and includes: 1) The concept of the appropriate NUP that matches the conditions of the state, 2) the issue and its definition at the stage of defining the problem and in the legislation and laws to be fixed and clear at the end of the implementation of the policy and showing the impact of its solution on reality, in addition, scenario is an essential work item that should be included in political decision-making stage, to predict the future of the issue in the event of doing-nothing, or to implement NUP if it will be supported by implicit urban policies that reinforce it. The stage of mobilizing public opinion is one of the factors of successful public policy, especially for the target groups of the issue and its solution. The importance of the role of media and marketing in particular in the first stage after the adoption of the policy, as it is considered one of the implicit and effective urban policies in activating marketing for new communities and development projects by clarifying the danger of random and wasting water without achieving sustainability and natural resources and their exposure to loss, determination of evaluation methods and impartial evaluators based on real updated data according to each stage, provided that evaluations are carried out on targeted quantitative and descriptive indicators that achieve efficiency and effectiveness, in addition to verifying the concurrency between NUP and implicit urban policies.

Table 3. New NUP goals conform to United Nations Sustainable Development Goals SDGs

► Main Issue axes	Agriculture & Reclaimed Land	Water resources	SUD
►SDGs NUP Goals ▼	2 Food security and sustainable agriculture promotion	6 Clean Water Supply and Sanitation availability for All	11 sustainable cities and communities
Raising the urban ratio to 60-65% of the total population in 2050			
Managing the duality of urban systems to strengthen global and regional competitiveness			
Strengthening of the large urban municipality in the Egyptian urban system			
Physical structuring of the regional and large municipality and urban development governance			
Supporting rural development by promoting urban-rural links with city regions			
Strengthening the dynamics of urban systems to reduce regional inequalities			
Balanced sprawl of urban settlements in desert hinterlands and border zones			
Addressing sustainable and smart growth orientations			
Enhancing cities' sustainability and resilience, and adaptability to climatic changes and environmental risks			
Enhancing existing cities by strengthening local economies and controlling growth within urban boundaries			
Notes: Shaded cells indicate how new NUP targets meet the challenges of the SDGs (2,6,11) [32]			

7. Conclusion and Recommendations

This paper has argued that the key role played by NUP in its integration with implicit urban policies in sustaining natural resources and achieving (water and food security) is central to Egypt's national security, but NUPs adopted by Egypt during the period from the sixties to the second decade of the 21st century failed to address the challenges of SUD. Therefore, the contribution of this study has been to confirm the need to assess policy-making and its outputs.

The main goal of the current study was to develop a framework for evaluating the NUP-making process as an adaptive tool to be used in tracking current policies and exploring the future coping with challenges of SUD.

Therefore, this work has first provided a deeper insight into the concept of NUP and its dimensions to conclude an overall definition that can be used broadly and appropriately, especially in the case of Egypt.

The second major finding was the NUP-making process framework as a base of evaluation methodology, as the research concluded the importance of drawing on past assessment experiences of NUP evaluation, urbanization developments, environments of the political system, and orientations that affected NUPs and resources sustainability following successive periods in Egypt as

apriority that apply to Egypt case and the framework of NUP-making evaluation methodology must be developed before adopting a new one. Secondly, drawing from NUP-making similar experiences work items related to Egypt case. Furthermore, policymakers have to commit to NUP adopted by the proposed framework of NUP-making evaluation methodology and the coherence promoted by the framework should be carried through to the implementation stage and the emerging of impacts and NUP result in fact within the commitments arising from an updated, valid and accurate database, based on mobilizing public opinion and expert surveys, etc. On the other hand, the conclusion of binding agreements among policymakers, the most important ministries, and related official bodies concerned with agriculture, land reclamation, or water resources would provide guarantees to once policies are in place, they must be implemented. In addition, to ensure the effectiveness of the framework of NUP-making evaluation methodology, it must include the main requirements of evaluation methods, impartial evaluators, and main Actors within a time-bound framework.

The research recommends in-depth studies of each phase and complements the mobilization of its components and work items following the methodological framework drawn, based on a wide extensive

questionnaire sent to experts in Urban Policy. Reviewing actors and their roles, as well as the possibility of developing a Software Platform for an easy review to monitor and follow-up in the current and future NUP-making, and strengthen the participation of civil society and other policy-making actors by including an extensive questionnaire, contributing to the periodic modernization of the methodological framework and the NUP-making process and thus the ability to deal with development issues and urban governance in Egypt.

Furthermore, this would be a fruitful area for further work in future studies of the NUP-making framework relationship with SUDS, NUP goals, and SDGs.

8. Discussion

The techniques proposed can be generalized to any country, as it is resilient to be editable to add or subtract work items or criteria and improve them. It has been applied to the Egyptian situation in light of previous studies and UN-Habitat studies. The new NUP 2019 preparation is still in its early stages of NUP preparation but is an important result and a systematic framework used in the development of the current NUP.

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