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ORIGINAL RESEARCH ARTICLE

Identifying Urban Management Challenges in Realizing Sustainable Non-financial Tools for Providing Resources to Municipalities

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ABSTRACT

BACKGROUND AND OBJECTIVES: Sustainable revenue generation for municipalities is one of the critical challenges of urban management worldwide, and the problem is particularly evident in Iran. The long-term dependence of municipalities on unstable income sources such as density sales and land-use changes has created instability in spatial development and intensified social and environmental inequalities. To overcome these issues, there is a growing need to shift from short-term financial strategies toward innovative and resilient approaches. Non-financial instruments, including Transfer of Development Rights (TDR), partnership contracts such as Build-Operate-Transfer (BOT) and Build-Own-Operate (BOO), as well as facilitation-based incentive policies, are increasingly discussed as viable alternatives to improve resource efficiency and reduce direct reliance on cash-based revenues. This research aims to identify the main challenges in adopting sustainable non-financial instruments for Iranian municipalities.

METHODS: A descriptive–analytical method was applied, combining the fuzzy Delphi technique with qualitative content analysis to identify and classify the main barriers to adopting non-financial instruments.

FINDINGS: *The results show that these instruments face multiple obstacles in five dimensions: legal, institutional, cultural, economic, and participatory.*

CONCLUSION: The study highlights that effective implementation requires structural reforms in urban governance, revision of legal frameworks, institutional strengthening, public trust building, and the use of data-driven planning tools. Based on the findings, a set of policy and operational recommendations has been proposed to address the identified barriers. These results provide guidance for improving sustainable municipal finance in Iran and contribute to the broader academic discussion on innovative non-financial approaches to urban management.

RUNNING TITLE: Challenges of Non-Financial Tools in Urban Management

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20	7	9

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INTRODUCTION

Securing sustainable sources of revenue for municipalities has become one of the most pressing challenges in contemporary urban management across the globe. Since the late twentieth century, the concept of sustainability has fundamentally reshaped urban planning discourses, emphasizing the need for cities to move beyond short-term, unstable financial mechanisms toward models that ensure social, economic, and environmental balance. Municipalities, as the primary institutions responsible for providing public services and maintaining urban infrastructure, require financial systems that not only guarantee continuity but also safeguard the long-term quality of life for urban residents. Within this global context, the issue of sustainable municipal financing is no longer a local or national concern; rather, it forms part of the broader international debate on sustainable urban development and good governance**.** Despite the worldwide attention to sustainability, municipalities in many developing countries continue to rely heavily on unstable sources of income. In Iran, this dependence is particularly evident in practices such as the sale of construction density, land-use change permits, and revenues from building violations. While these mechanisms may generate short-term funds, they simultaneously create distorted development patterns, reduce environmental quality, and exacerbate inequalities in access to services and public space. Over time, such reliance has fostered a cycle of "urban selling," in which cities are treated as commodities rather than living systems. This condition not only undermines physical planning and long-term investment strategies but also increases urban vulnerability to socio-economic and environmental shocks**.**

From the early 1990s onward, the literature on sustainable development began to underline the importance of stable and predictable revenue streams for municipalities. Two main categories of instruments were introduced: financial and non-financial. Financial instruments, such as municipal bonds or land and building investment funds, have received significant scholarly and policy attention. However, they often remain tied to traditional economic cycles and may perpetuate dependency on volatile markets. Non-financial instruments, by contrast, emerged as innovative mechanisms capable of reducing direct financial pressure while enhancing the overall efficiency of urban management. Instruments such as Transfer of Development Rights (TDR), participatory contracts like Build-Operate-Transfer (BOT) and Build-Own-Operate (BOO), and regulatory mechanisms based on facilitation or incentive zoning illustrate the diverse pathways through which municipalities can generate value without resorting to purely monetary exchanges**.**

The potential of non-financial instruments lies in their ability to mobilize hidden assets within the urban system. By redistributing development rights, encouraging private-sector involvement, or leveraging social capital, these mechanisms create synergies that extend beyond immediate financial gain. For instance, TDR schemes not only preserve environmentally sensitive areas but also redirect growth toward more suitable zones, thereby aligning urban expansion with sustainability objectives. Similarly, BOT and BOO contracts allow municipalities to benefit from infrastructure development without bearing the full financial burden upfront, while incentive-based zoning can encourage private developers to contribute to public amenities in exchange for carefully regulated benefits. Collectively, these approaches represent a paradigm shift from revenue extraction toward resource optimization and stakeholder participation**.**

Nevertheless, implementing non-financial instruments in developing countries such as Iran has proven difficult. Barriers arise from multiple dimensions. Economically, weak institutional capacity and inefficient financial systems hinder the effective application of these tools. Legally, ambiguities and gaps in regulatory frameworks prevent their widespread adoption. Social and cultural factors, including resistance to change, lack of trust in municipal institutions, and limited public awareness, further constrain their potential. Politically, short-term decision-making and fragmented governance structures undermine long-term planning efforts. Together, these challenges create an environment in which non-financial instruments remain underutilized despite their considerable promise**.**

The significance of this research stems precisely from this gap between potential and practice. At present, a large portion of Iranian municipalities' revenues are generated through unsustainable and even destructive means, reinforcing the cycle of dependency on construction-related charges and regulatory violations. Although these methods may address immediate financial needs, they ultimately erode the physical integrity of cities, reduce environmental resilience, and weaken social cohesion. In this context, rethinking urban financing mechanisms is not simply an option but an urgent necessity**.**

This study addresses these challenges through a case analysis of Langarud, a medium-sized city in northern Iran. By selecting Langarud as a representative case, the research not only provides localized insights but also offers lessons that are potentially applicable to other medium-sized municipalities across the country. By systematically examining the role of non-financial instruments within the urban financing system, this study aims to contribute to a broader transformation in the way municipalities perceive and mobilize resources. If municipal leaders adopt a more strategic perspective, they can move away from passive, consumption-oriented governance and toward proactive, regulatory, and participatory models. This transformation represents nothing less than a paradigm shift in urban fiscal governance. Instead of treating violations and land commodification as revenue sources, municipalities could prioritize the improvement of quality of life, equitable access to services, and the development of resilient infrastructures**.**

Accordingly, this paper seeks to identify and analyze the major challenges confronting the implementation of sustainable non-financial instruments in Iran. By focusing on the intersection of economic, legal, institutional, and socio-cultural dimensions, the study provides an integrated framework for understanding why these mechanisms have not yet achieved their potential. Beyond diagnosis, however, the research emphasizes the strategic significance of adopting these tools as levers for long-term sustainability. The findings aim to guide policymakers and urban managers in revising existing structures, designing more effective regulatory frameworks, and ultimately strengthening the fiscal and institutional resilience of municipalities**.**

In sum, the pursuit of sustainable urban development in Iran requires a decisive break from dependence on unsustainable financial sources. Non-financial instruments, if effectively implemented, can become catalysts for this transition. They not only provide municipalities with alternative pathways to resource mobilization but also foster collaborative governance and enhance urban sustainability. By highlighting both the challenges and opportunities associated with these mechanisms, this study aspires to enrich the ongoing global discourse on sustainable municipal finance while offering a locally grounded contribution through the case of Langarud to the practice of urban management in developing countries. The present study was conducted in Langarud, Iran, in March 2024.

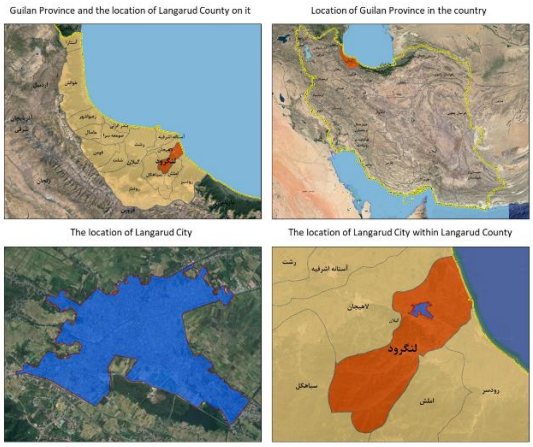

Fig. 1. The Location of the Area under Study in the Map
Geographic Information System (GIS)

Langarud was selected as a representative medium-sized city for this research. The city combines sufficient complexity for analytical study with significant physical and functional importance. Its strategic location between Lahijan and Ramsar enhances accessibility and strengthens its role as a potential tourism hub in the region. In addition, the presence of diverse natural and cultural assets—including the Langarud River, Kiakalaye wetland, agricultural lands, orchards, and valuable historical sites—highlights its capacity for sustainable physical and economic development. With a population of around 79,000, Langarud is the second most important urban center in eastern Gilan Province after Lahijan, making it a suitable case for examining the challenges of municipal management in applying non-financial instruments for sustainable revenue generation.

Theoretical Framework: The concept of sustainable urban development stems from ideas that, in the face of environmental and social constraints, lean toward utopianism (Salehi, 2008: 293). Achieving sustainable urban development requires the design and implementation of policies that guide cities toward maintaining a balance among the environment, economic growth, social justice, and even cultural considerations (Ahmadi Torshizi, 2008: 296). One of the key pillars in this process is securing sustainable revenue sources for municipalities (Barsam *et al.*, 2019: 184), especially under conditions where traditional revenues such as taxes and government subsidies, or unsustainable ones (such as the sale of development rights), face limitations due to economic, environmental, and social factors (Gholipour *et al*., 2019: 157). Sustainable revenue is defined as the maximum obtainable income within a given period, with the guarantee of generating the same level of income in the subsequent period, even under conditions where the economic system faces resource constraints, labor shortages, human-made capital limitations, and natural capital restrictions (Shekofteh, 2020: 86)**.**

In recent years, attention toward innovative instruments for urban financing has increased (Hajilou *et al*., 2017: 4). These instruments are generally divided into two main categories: financial and non-financial (Floater *et al*., 2020). While financial instruments primarily rely on cash inflows (ownership-based and debt-based instruments) (Jamshid Zadeh, 2003: 29), non-financial instruments provide greater sustainability by employing institutional capacities, fostering private-sector participation, utilizing transferable rights, or applying contractual mechanisms. These approaches enable municipalities to expand development and investment capacity without imposing direct financial burdens (Spaans *et al*., 2009)**.** In general terms, non-financial instruments are defined as government actions aimed at compensating for the loss of an individual's property rights by creating a new transferable property right that the person can either use or sell, or as mechanisms that provide incentives to developers for implementing specific programs (Wang, 2019: 2).

Public–Private Partnership (P.P.P) Instrument: This mechanism involves the public sector—including the government, governmental institutions, municipalities, non-governmental organizations, and other public bodies—utilizing the capacities of the private sector, such as expertise, experience, design, construction, and financial resources, to provide essential infrastructure services such as energy, water and wastewater, transportation, communications, healthcare, education, and more. The characteristics of public–private partnership are illustrated in the Fig. 1. below (Vakaf and Golabchi, 2017: 6).

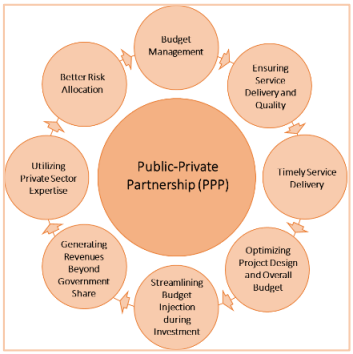

Fig. 2. Characteristics of Public–Private Partnership (PPP)

Source: Vakaf and Golabchi, 2017: 6

Public–Private Partnership (PPP) refers to long-term contractual arrangements between public sector institutions and private sector entities, primarily aimed at financing, designing, operating, and managing infrastructure facilities and services (ADB, 2006: 15). PPP models are highly diverse, each classified into different types depending on the level of commitments by the parties, ownership structure, financing methods, and project operation mechanisms. The table below presents the most common models (Vakaf and Golabchi, 2010: 7, cited in Ahmadi, 2010).

Row	Type of Contract	Abbreviation
1	Build-Operate-Transfer	BOT
2	Build-Ownership-Operate	BOO
3	Build-Ownership-Operate-Transfer	BOOT
4	Build-Ownership-Operate-Lease	BOOL
5	Build-Lease-Transfer	BLT
6	Build-Transfer	BT
7	Build-Lease-Operate	BLO
8	Design-Build-Operate-Maintenance	DBOM
9	Rehabilitate-Operate-Transfer	ROT
10	Rehabilitate-Operate-Ownership	ROO
11	Modernize-Ownership-Operate-Transfer	MOOT
12	Build-Transfer-Operate	BTO
13	Design-Build-Finance-Operate	DBFO
14	Operate-Manltenance	OM
15	Design-Build-Management-Finance	DBMF

Table 1. Common Models of Public–Private Partnership (PPP)
Source: Vakaf and Golabchi, 2010: 7, cited in Ahmadi, 2010

Transfer of Development Rights (TDR): This instrument enables the transfer of building permits from one property to another. In many countries, TDR has been employed as a tool for preserving green spaces, cultural heritage, and controlling density in sensitive areas. The Transfer of Development Rights program is an approach that, while recognizing vested rights of property owners, seeks to facilitate their transfer in order to increase the efficiency of urban development plans (Najah, 2015: 213)**.** The core concepts underlying TDR are summarized in the notions of "sending areas" and "receiving areas." (VNRC, 2017).

What distinguishes non-financial instruments is their "software-oriented" nature in urban management. In other words, these tools are primarily based on regulation, spatial planning, and institutional capacity rather than direct monetary flows. Their success depends on the presence of an efficient urban governance structure, a transparent legal framework, and active stakeholder participation (Sukuk.com, n.d)**.**

As a result, non-financial instruments can be regarded as complementary to, or even substitutes for, traditional financial resources in urban management—particularly in countries facing resource constraints but possessing considerable spatial, institutional, and legal capacities.

Research Background: The existing body of research on sustainable urban resource mobilization, particularly in Iran, has largely focused on financial instruments and traditional revenue-generation methods. However, in recent years, attention toward innovative tools—especially non-financial instruments—has been expanding**.**

Experiences in Developed Countries

International studies indicate that many developed cities, by employing instruments such as TDR, BOT contracts, and public–private partnership policies, have succeeded in diversifying and sustaining their revenue sources. For example**:**

- In South Korea, innovative tools such as bonus density and Type I Development Utilization Programs (DUP) have been applied to reduce the government's financial burden in urban development. This approach, however, faces challenges such as high transaction costs and constraints in preserving historical heritage and environmental resources, while the transfer of development rights is largely

permitted only on smaller and intra-regional scales (Spaans and Janssen-Jansen, 2008: 11). The following illustration shows the different levels of development density within South Korea's urban planning system (Spaans and Janssen-Jansen, 2008: 82).

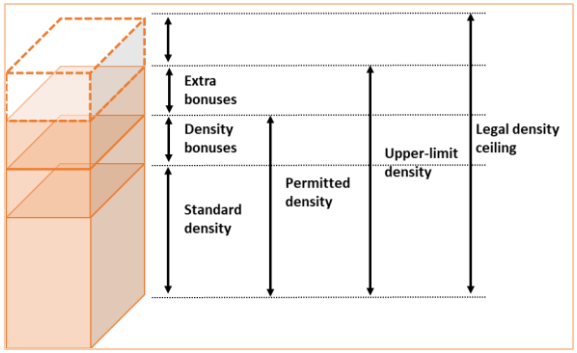

Fig. 3. Types of Development Densities in South Korea
Source: Spaans and Janssen-Jansen, 2008: 82

- In Spain, since the 1990s, the financing of urban infrastructure has increasingly relied on non-financial instruments such as land readjustment and non-monetary compensations rather than raising taxes. This method, which operates similarly to TDR, allows developers to invest without heavy dependence on bureaucratic processes and has been welcomed by local landowners, particularly in areas with small parcels and fragmented ownership. However, in regions with cultural differences or complex ownership structures, such as the coastal areas of Valencia, resistance has emerged, especially from non-local owners. Spain's experience demonstrates that the success of such instruments depends on social awareness, guaranteeing economic benefits for landowners, and understanding land as a shared asset for development (Spaans and Janssen-Jansen, 2008: 93–114). The figure below illustrates the hierarchical decision-making structure in land-use planning in Spain (Spaans and Janssen-Jansen, 2008: 95).

Institutional Framework of Spain	1. National Level: Regulation of fundamental property rights and supervision of regional and local resolutions.
	2. Regional Level: Independent legislation on land use within the framework of national guidelines.
	3. Local Level: Issuance of building permits and approval of urban plans in the absence of regional conflicts.

Table 2. Levels of Decision-Making of Public Authorities
Source: Spaans and Janssen-Jansen, 2008: 95

- In the United States, urban planning and land use are managed at the municipal level, and the Transfer of Development Rights (TDR) has been applied as one of the innovative and flexible approaches to address legal constraints, environmental protection, and controlled development. Experiences across various states and cities show that the objectives of this instrument differ depending on local conditions. For example, in New York City, TDR was initially used to compensate for restrictions imposed by preservation laws on historic properties, and later its scope expanded. In the Hudson Yards project, TDR was combined with financial incentives to attract investment and develop an infrastructural district. In Malibu, TDR was primarily employed for environmental protection, transferring development from high-risk lands to safe, infrastructure-ready locations. In Portland, Oregon, the instrument complemented the urban growth boundary policy, helping to preserve agricultural and forest lands while promoting compact in-city development. Overall, U.S. policies regarding the use of non-financial instruments can be summarized in the following table.

Tool	Full Name
TDR	Transferable Development Rights
TDC	Transferable Development Credits
PDR	Purchase of Development Rights
RDR	Residential Development Rights

Table 3. Introduction of Flexible TDR Development Processes in the United States

The U.S. experience shows that the successful implementation of TDR requires flexible design, alignment with local regulations, and sufficient incentives for property owners. Moreover, the diversity of approaches across different states highlights the importance of adapting the instrument to local characteristics and balancing public and private interests**.**

-In Italy With delegated authority granted to urban areas, diverse and innovative approaches have emerged in the use of non-financial instruments such as TDR, planning agreements, and integrated intervention programs. These tools have enabled land preservation, urban regeneration, and non-monetary compensations (conversion), and in some cases, they have helped balance interests between private landowners and public institutions. However, Italy's experience demonstrates that the implementation of such instruments requires transparent and fair mechanisms, since negotiations between municipalities and citizens may result in subjective decision-making and unequal investment opportunities. Therefore, emphasizing the principles of equality and competition plays a crucial role in the success of these policies (Jansen-Janssen and Spaans, 2008: 115–128)**.**

- In Japan Non-financial instruments such as land readjustment and urban redevelopment are employed within a negotiation-oriented and flexible planning system. With the participation of landowners and the use of incentives like bonus density, these instruments have enabled the reconstruction of deteriorated areas and safer, more efficient land use. Examples such as the Marunouchi district in Tokyo demonstrate that cooperation between government and the private sector can enhance urban performance and land productivity. However, excessive emphasis on economic growth has sometimes overshadowed spatial quality and design. Japan's experience underscores the importance of maintaining a balance between economic efficiency and physical quality in urban planning. The following schematic illustrates the structure of the urban planning system in Japan (Jansen-Janssen and Spaans, 2008: 55).

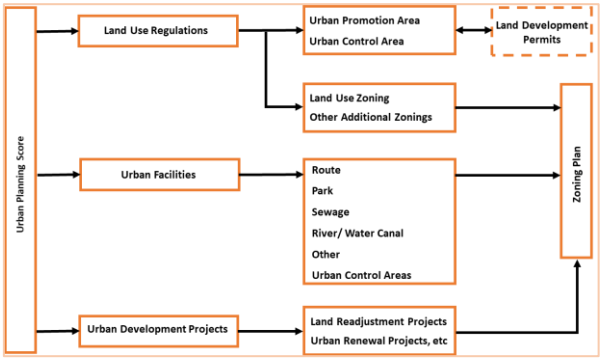

Fig. 4. Structure of the Urban Planning System in Japan

Source: Jansen-Janssen and Spaans, 2008: 55

The Netherlands, due to land scarcity and constant development pressures, has historically maintained a relatively centralized planning system. However, in recent years, with a shift toward decentralized and market-oriented policies, the use of non-financial instruments in planning has been reinforced. One of the most notable examples is the "Red for Green" (VOR) program in Limburg Province, where urban development on designated land must be accompanied by investments in nature conservation projects. In North Brabant Province, the successful "Space for Space" program—aimed at demolishing vacant stables and constructing environmentally integrated villas—helped improve the spatial quality of rural areas. This program was implemented through cooperation between the province and private actors, utilizing a local TDR bank for development exchange and environmental compensation. Nevertheless, it faced challenges such as financing issues and conflicts of interest between local and provincial institutions. On a larger scale, the VINEX project in central Netherlands and the Zuidas district project in Amsterdam illustrate successful experiences of land reallocation with extensive public–private cooperation. In Amsterdam, this goal was achieved through

burying transportation infrastructure, developing a mixed-use commercial–cultural hub, and enhancing urban quality (Jansen-Janssen and Spaans, 2008: 183).

The Dutch experience shows that although the classical TDR framework has not been formally applied, diverse non-financial compensation tools have been used to enhance spatial quality and manage development. While these instruments have been relatively successful, they still face challenges in legal frameworks, implementation processes, and balancing interests. Nevertheless, they are moving toward adaptive, participatory, and sustainable planning**.**

The following table provides a summary of the case studies reviewed from developed-country experiences (Jansen-Janssen and Spaans, 2008: 12).

Country Name	Conservation Experience	Conversion Experience	Reallocation Experience
Japan	Marunouchi district; a commercial area in Tokyo	Safer and more efficient land use	Tokyo Station
South Korea	-	-	Sinseol-dong (Seoul)
Spain	Protection of natural areas and listed buildings (Almeria city)	Calle Francia (Valencia city)	Oriols neighborhood (Valencia city)
Italy	Cappuccini district (Schio)	Cremona city	Rome's Master Urban Plan
USA	Malibu city (California)	Hudson Yards district (New York)	Portland (Oregon)
Netherlands	Limburg Experience	Space-for-Space program (North Brabant province)	Gem in the Vinex, sports on the southern axis (Amsterdam city)

Table 4. A Summary of the Case Studies Reviewed

Source: Authors (2025)

Experiences in Developing Countries

- **India**: With the growing demand for urban infrastructure resulting from rapid urbanization and the inefficiency of public budgets, the Government of India has adopted a set of financial and non-financial measures to develop alternative resources and strengthen municipal capacities, including: Municipal credit rating: Independent rating agencies were established to attract investors and assess municipalities' credibility. These ratings were applied not only for bond issuance but also for evaluating financial management, institutional capacity, and transparency. Taxable bonds: Although these are financial instruments, the noteworthy aspect of India's experience is their use in market-based projects without government guarantees, which created obligations for municipal financial transparency. This process indirectly pushed municipalities to undertake organizational reforms and improve their financial systems. Tax-exempt bonds: With central government incentives, municipalities were encouraged to issue bonds for disadvantaged areas or critical infrastructure projects. These instruments helped strengthen local resources for public services in low-income neighborhoods (e.g., Ahmedabad and Hyderabad). Pooled financing mechanism: In this model, several small municipalities pooled their resources, formed joint funds, and accessed the capital market through multi-layered deposit schemes. An example is the WSPF fund, which financed water and wastewater projects for 14 cities. Institutional reforms and national PPP guidelines: Designed and implemented to improve infrastructure project delivery, these reforms included comprehensive guidance for municipalities, model contracts, training programs, and institutional capacity-building (Chetan, 2011).By employing market-oriented and structural non-financial tools such as credit ratings, PPP models, institutional pooling, and smart policymaking, India has been able to expand urban infrastructure with private sector involvement. This experience provides a model for combining financial and non-financial instruments in developing countries.

Taiwan: Particularly in Taipei, tools such as TDR, BFA, and IFA have been used to operationalize air rights as non-financial instruments for managing urban growth, financing infrastructure, and compensating for development restrictions. These rights, defined in vertical space above land parcels, can be transferred, assigned, or sold, and play a significant role in increasing building density,

compensating for ownership restrictions, and boosting municipal revenues. Taipei transformed air rights into a tradable asset through a three-step process: 1.Commodification: Municipalities defined air rights as tradable assets and development incentives. 2.Marketization: Air rights were exchanged in secondary markets via TDR and other tools. 3.Investment: Developers and investors purchased these rights and used them in new projects.

The main instruments of air rights in Taiwan include: 1. Bonus Floor Area (BFA): A non-transferable building incentive that allows developers to gain extra density on the same property in exchange for quality design or public services. Its goal is to stimulate urban regeneration, improve design quality, and encourage participation in urban services. 2. Transferable Development Rights (TDR): This allows the transfer of density from one property to another, particularly where owners are restricted from development due to heritage protection or environmental limits. TDR thus plays an important role in both infrastructure development and compensation for restricted ownership rights. 3. Incremental Floor Area (IFA): A purchasable building right enabling developers to build additional floors on the same site in return for financing public infrastructure projects. IFA has become an important tool for mobilizing resources for public investment.

These instruments, by incentivizing developers and reallocating density, establish a link between urban planning regulations and market logic, representing a significant example of the smart application of indirect financing tools in East Asia (Yeng Chen, 2018: 16).

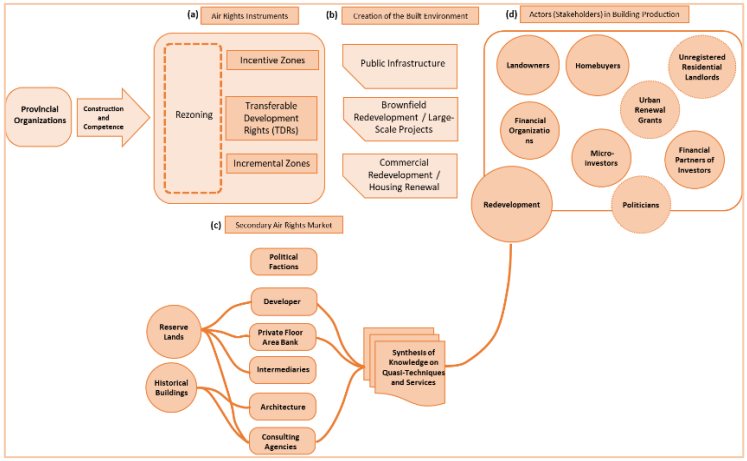

Fig. 5. The Structure of Urban Air Rights in Planning and Redevelopment Methods

Source: Yeng Chen, 2018: 16

Analysis of the Experience of Using Public–Private Partnership (PPP) in Iran: In Iran, PPP was introduced in the early 2010s as one of the non-budgetary instruments for financing public projects. According to Article 214(b) of the Fifth Development Plan Law, the government was obliged to enhance the efficiency of capital asset projects by adopting methods such as Build–Operate–Transfer (BOT), construction schemes, and PPP models. This mandate was also reflected in the annual budget laws of 2012, 2013, and 2014. However, embedding PPP provisions in annual budget laws has faced challenges. One of the main criticisms has been the legal instability of such provisions, as budget laws are valid only for one year, while PPP contracts are inherently long-term. This instability has raised investor concerns, leaving many projects without enforceable guarantees. For this reason, the Guardian Council eliminated Clause 8 on PPP from the 2014 budget bill. Supporting Laws and Regulations for PPP in Iran: In pursuit of expanding this model, several laws and regulations have been developed, the most important of which include**:**

-Law on the Encouragement and Protection of Foreign Investors (2002): Provided the legal basis for foreign investment through contracts such as joint ventures, buy-back, and BOT. It explicitly stated that such investments should not rely on government guarantees, but rather on the project's economic performance**.**

-Publication No. 469 (2008): The first official attempt to draft a model PPP contract in BOT format, prepared with reference to international standards such as UNIDO guidelines.

-PPP Agreement Framework (2014): A comprehensive framework covering various PPP models, including BOO and BOT, designed to facilitate their use in infrastructure and service projects.

-Instruction for Article 27 of the Law on Addition No. 2 (2015 and 2017 revisions): Specified the process of defining, evaluating, and transferring capital projects (unfinished or ready for operation) to the non-governmental sector. It remains one of the most important executive documents for PPP in Iran.

-Comprehensive PPP Bill (2018): For the first time, the government drafted a comprehensive bill to institutionalize PPP. Although it has not yet been finalized in Parliament and was returned to the government, it reflects a structural effort toward institutionalization.

-Executive Regulation of Clause 19 of the Budget Law (2018–2020): Defined tax, insurance, and financial incentives for PPP projects. However, with the removal of Clause 19 from the 2021 budget law, its continuity became uncertain.

-PPP Guarantee Regulation (2020): Issued in response to concerns of executive bodies regarding the lack of financial guarantees, it introduced specific mechanisms for guarantees in PPP contracts, representing an important step toward building private-sector trust.

Although multiple frameworks and documents have been drafted for PPP development in Iran, the absence of a comprehensive and permanent law, institutional misalignment, and weak legal guarantees for investments remain major barriers to the successful implementation of this model. Moreover, the limited role of municipalities and urban institutions in employing these instruments has prevented the active use of indirect financing capacity in the field of urban services and infrastructure.

Nevertheless, existing experiences demonstrate that there is a suitable legal and institutional potential for expanding non-financial financing instruments in Iran. With the finalization of the PPP bill and the strengthening of municipal institutional capacities, PPP models could play a more effective role in urban development. The following table presents a structured overview of the most important documents and laws related to PPP development in Iran.

Document Title	Year of Approval	Type of Document
Law on the Encouragement and Protection of Foreign Investment	2002 (1381)	Formal Law
Publication No. 469 – BOT Contracts	2008 (1387)	Contractual Model
PPP Agreement Framework	2014 (1393)	Organizational Guideline
Instruction of Article 27, Law on Addition (2)	2015/2017 (1394/1396)	Instruction approved by the Economic Council
Executive Regulation of Clause 19, Budget Law	2020 (1399)	Executive Regulation

Table 5. Key Laws and Documents in the Development of Public–Private Partnership (PPP) in Iran

Source: Authors (2025)

The aim of the present study is to identify the key urban management challenges in realizing sustainable non-financial tools for resource mobilization in municipalities. The study was conducted in Langarud, Iran, in March 2024.

MATERIALS AND METHODS

In this study, from the perspective of purpose, it is applied research, and in terms of nature, it is descriptive–analytical. Since many of the aspects examined in this study relate to structural, institutional, legal, and cultural characteristics of urban management, the research method combines documentary review and expert opinion analysis.

In the first stage, library studies and reviews of official documents were used to develop the theoretical framework and to initially identify different types of non-financial instruments as well as relevant domestic and international experiences. Subsequently, to identify and categorize the

challenges, the views of specialists and experts in urban management, urban law, and financial planning were utilized.

To validate the extracted challenges, the fuzzy Delphi method was applied, enabling a gradual consensus among experts and reducing ambiguity in subjective judgments.

3-2- Statistical Population and Sampling: The target population of this research consisted of experts, municipal managers, city council members, and university professors in related fields in the city of Langarud. For sample selection, a purposive (non-probability) sampling method and the snowball technique were used. The process of gathering opinions continued until theoretical saturation was achieved.

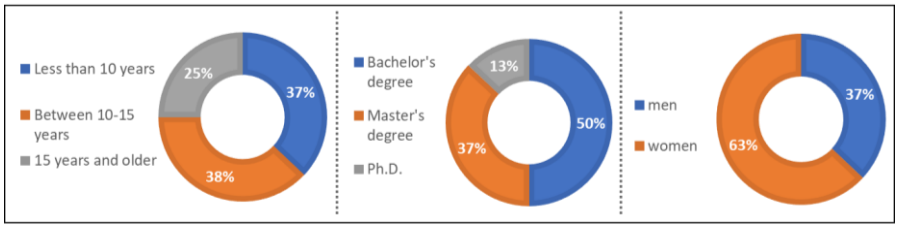

Fig. 6. Demographic Characteristics of Interviewees

Source: Authors (2025)

In this study, the main challenges of employing non-financial instruments were first identified using the fuzzy Delphi technique. Then, to illustrate the causal and consequential relationships among these challenges and their resulting outcomes, the Problem Tree model was applied. This model provides a visual representation of root causes, intermediate factors, and ultimate consequences, offering a clear framework for the structural analysis of obstacles to sustainable urban development.

The findings of this research are the result of a systematic process of qualitative data collection and analysis through the fuzzy Delphi method, review of documents and theoretical resources, and expert opinions in the fields of urban management, financial planning, urban law, and urban economics in the city of Langarud.

At this stage, to determine the weight of challenges, survey forms encompassing all challenges identified from expert interviews were prepared and distributed among specialists in the research field. Experts were asked to evaluate the impact of challenges in relation to the urban development context of Langarud and assign an importance score to each parameter as follows: very important (9), important (7), moderately important (5), less important (3), and unimportant (1).

It should be noted that the acceptance threshold for challenges was set at greater than 0.7, which plays a decisive role in the prioritization of identified challenges.

The following table presents the calculation of relative fuzzy weights of parameters, the average fuzzy weight, and the defuzzification of challenges.

Challenges	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth	Expert 1			Expert 2			Expert 3			Expert 4			Expert 5			Expert 6			Expert 7			Expert 8		
c1	5	5	4	5	4	5	4	3	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.25	0.5	0.75
c2	3	3	4	4	3	2	3	3	0.25	0.5	0.7	0.25	0.5	0.75	0.5	0.75	1	0.5	0.75	1	0.25	0.5	0.75	0	0.25	0.5	0.25	0.5	0.75	0.25	0.5	0.75
c3	2	1	1	3	2	1	2	2	0	0.25	0.5	0	0	0.25	0	0	0.25	0.25	0.5	0.75	0	0.25	0.5	0	0	0.25	0	0.25	0.5	0	0.25	0.5
c4	4	5	3	4	5	4	5	4	0.5	0.75	1	0.75	1	1	0.25	0.5	0.75	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1
c5	5	5	4	5	4	3	5	5	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.25	0.5	0.75	0.75	1	1	0.75	1	1
c6	4	5	3	5	4	5	5	3	0.5	0.75	1	0.75	1	1	0.25	0.5	0.75	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1	0.25	0.5	0.75
c7	3	4	2	4	4	3	3	3	0.25	0.5	0.75	0.5	0.75	1	0	0.25	0.5	0.5	0.75	1	0.5	0.75	1	0.25	0.5	0.75	0.25	0.5	0.75	0.25	0.5	0.75
c8	2	3	1	4	2	3	1	2	0	0.25	0.5	0.25	0.5	0.75	0	0	0.25	0	0	0.25	0	0.25	0.5	0.25	0.5	0.75	0	0	0.25	0	0.25	0.5
c9	5	5	4	4	5	4	3	5	0.75	1	1	0.75	1	1	0.5	0.75	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.25	0.5	0.75	0.75	1	1
c10	3	4	3	4	4	3	5	3	0.25	0.5	0.75	0.5	0.75	1	0.25	0.5	0.75	0.5	0.75	1	0.5	0.75	1	0.25	0.5	0.75	0.75	1	1	0.25	0.5	0.75
c11	4	5	4	5	5	4	5	5	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1
c12	3	3	2	4	2	3	3	4	0.25	0.5	0.75	0.25	0.5	0.75	0	0.25	0.5	0.5	0.75	1	0	0.25	0.5	0.25	0.5	0.75	0.25	0.5	0.75	0.5	0.75	1
c13	4	5	4	3	4	5	3	4	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.25	0.5	0.75	0.5	0.75	1	0.75	1	1	0.25	0.5	0.75	0.5	0.75	1
c14	3	4	2	4	3	4	4	2	0.25	0.5	0.75	0.5	0.75	1	0	0.25	0.5	0.5	0.75	1	0.25	0.5	0.75	0.5	0.75	1	0.5	0.75	1	0	0.25	0.5
c15	5	5	4	5	5	5	4	5	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1
c16	4	5	3	5	5	5	4	3	0.5	0.75	1	0.75	1	1	0.25	0.5	0.75	0.75	1	1	0.75	1	1	0.5	0.75	1	0.5	0.75	1	0.25	0.5	0.75
c17	3	4	2	3	4	5	3	3	0.25	0.5	0.75	0.5	0.75	1	0	0.25	0.5	0.25	0.5	0.75	0.5	0.75	1	0.75	1	1	0.25	0.5	0.75	0.25	0.5	0.75
c18	5	5	4	4	5	4	5	5	0.75	1	1	0.75	1	1	0.5	0.75	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1
c19	5	5	4	5	5	5	5	4	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1	0.75	1	1	0.75	1	1	0.5	0.75	1
c20	4	5	4	5	4	5	3	4	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.25	0.5	0.75	0.5	0.75	1
c21	5	5	5	4	5	4	5	5	0.75	1	1	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1
c22	5	5	4	4	3	4	3	5	0.75	1	1	0.75	1	1	0.5	0.75	1	0.5	0.75	1	0.25	0.5	0.75	0.5	0.75	1	0.25	0.5	0.75	0.75	1	1
c23	5	5	4	5	4	5	5	5	0.75	1	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1	0.75	1	1
c24	4	5	3	5	4	5	5	5	0.5	0.75	1	0.75	1	1	0.25	0.5	0.75	0.75	1	1	0.5	0.75	1	0.75	1	1	0.75	1	1	0.75	1	1
c25	3	4	2	4	3	5	4	5	0.25	0.5	0.75	0.5	0.75	1	0	0.25	0.5	0.5	0.75	1	0.25	0.5	0.75	0.75	1	1	0.5	0.75	1	0.75	1	1

Table 6. Calculation of Relative Fuzzy Weights of Parameters

Source: Authors (2025)

Challenge	Average Fuzzy Weight (L–M–U)	Defuzzified Weight
C1	0.59375 – 0.84375 – 0.96875	0.8021
C2	0.28125 – 0.53125 – 0.775	0.5292
C3	0.03125 – 0.1875 – 0.4375	0.2188
C4	0.5625 – 0.8125 – 0.96875	0.7813
C5	0.625 – 0.875 – 0.96875	0.8229
C6	0.5625 – 0.8125 – 0.9375	0.7708
C7	0.3125 – 0.5625 – 0.8125	0.5625
C8	0.0625 – 0.21875 – 0.46875	0.2500
C9	0.59375 – 0.84375 – 0.96875	0.8021
C10	0.40625 – 0.65625 – 0.875	0.6458
C11	0.65625 – 0.90625 – 1	0.8542
C12	0.25 – 0.5 – 0.75	0.5000
C13	0.5 – 0.75 – 0.9375	0.7292
C14	0.3125 – 0.5625 – 0.8125	0.5625
C15	0.6875 – 0.9375 – 1	0.8750
C16	0.5625 – 0.8125 – 0.9375	0.7708
C17	0.34375 – 0.59375 – 0.8125	0.5833
C18	0.65625 – 0.90625 – 1	0.8542
C19	0.6875 – 0.9375 – 1	0.8750
C20	0.5625 – 0.8125 – 0.96875	0.7813
C21	0.6875 – 0.9375 – 1	0.8750
C22	0.53125 – 0.78125 – 0.9375	0.7500
C23	0.6875 – 0.9375 – 1	0.8750
C24	0.625 – 0.875 – 0.96875	0.8229
C25	0.4375 – 0.6875 – 0.875	0.6667

Table 7. Calculation of Average Fuzzy Weights and Defuzzification
Source: Authors (2024)

RESULTS AND DISCUSSION

Out of the 25 identified challenges, 16 demonstrated an acceptable threshold intensity greater than 0.7. Subsequently, each of these challenges was classified under the five overarching categories mentioned above, which include the following.

1- Legal and Regulatory Challenges: A significant portion of the inefficiency in applying non-financial instruments stems from legal gaps and ambiguities. The main issues identified include**:**

-Lack of dedicated legislation for innovative instruments: Tools such as Transfer of Development Rights (TDR), BOT contracts, and other participatory methods still lack independent recognition in comprehensive urban laws such as the Municipalities Law, Urban Renewal Law, or budgeting regulations**.**

-Multiplicity and conflict of regulations: Contradictions sometimes arise between higher-level policies, executive bylaws, and interpretations of supervisory organizations, hindering integrated implementation of new initiatives. For instance, municipal investment contracts may be rejected by the Court of Audit or the General Inspection Organization**.**

-Centralized approval and decision-making powers: Despite Article 103 of the Constitution granting city councils authority, many critical decisions remain dependent on approval by the Ministry of Interior, the Planning and Budget Organization, or supervisory bodies. This centralization restricts flexibility in adopting new instruments**.**

-Weak enforceability of contracts: Investor hesitation toward non-financial projects is partly due to the lack of effective arbitration systems, enforcement guarantees, and transparent dispute resolution mechanisms in participatory contracts**.**

2- Institutional and Managerial Challenges: Weaknesses in urban governance, as the foundational infrastructure for implementing non-financial instruments, appear across different management layers**:**

-Centralized decision-making structures: Urban planning in Iran largely follows a top-down model, leaving municipalities with limited autonomy to design financing tools**.**

-Lack of specialized capacity within municipalities: Many municipalities face serious shortages of skilled personnel in areas such as financial analysis, participatory planning, risk management, or PPP contract negotiation.

-Absence of systematic evaluation and feedback processes: Non-financial schemes usually lack cycles of assessment, improvement, or documentation. Pilot implementation, Social Return on Investment (SROI) evaluation, and experience-sharing are largely neglected.

-Weak transparency and accountability: The absence of integrated financial information systems, public project reporting, and citizen oversight reduces public and private trust.

3- Cultural and Social Challenges: The success of non-financial instruments requires a supportive socio-cultural foundation. Two main barriers are identified:

-Ownership-centered culture and spatial individualism: Citizens and even municipal managers often view land as a tool for personal gain, leading to resistance against participatory or redistributive approaches.

-Weak public and media education: Non-financial tools are relatively new concepts and remain unfamiliar even to many managers and experts. This lack of awareness limits active participation and social support.

4- Economic and Financial Challenges: The application of non-financial instruments in Iran is constrained by multiple economic and financial barriers, from macroeconomic conditions to municipal institutional capacity:

-Severe economic volatility and high inflation: Unpredictable macroeconomic variables make long-term investments highly risky, discouraging investors from engaging in PPP contracts.

-Lack of modern financial management tools in municipalities: Such as project databases, project risk-rating systems, cost–benefit analyses, or performance-based budgeting.

-Absence of transparent models for calculating social and environmental returns: Since non-financial tools often lack direct financial yield and generate long-term, indirect benefits, the absence of proper metrics leads to their undervaluation.

5- Stakeholder Participation and Interaction Challenges: Finally, effective implementation of non-financial tools requires sustainable mechanisms for interaction among multiple actors:

-Lack of intermediary organizations to facilitate cooperation between municipalities, investors, civil society, and supervisory bodies.

-Conflicts of interest among stakeholders, especially in projects with land value gains or indirect benefits.

-Absence of successful localized models that could build public and political trust in the replicability of such tools.

Based on the Problem Tree technique, the identified challenges were structured as root causes, intermediate factors, and final consequences. This causal framework complements the fuzzy Delphi results, providing a systematic picture of relationships among obstacles and their impacts on urban development.

Building on the fuzzy Delphi analysis, the Problem Tree diagram (Figure 6) provides a structured visualization of the main barriers to adopting non-financial instruments in urban development projects. It illustrates how multidimensional challenges—economic–financial, strategic–operational, legal–regulatory, institutional–human, and socio-political—are interconnected, producing outcomes such as undesirable land-use changes, infrastructure pressure, dependency on unstable revenues, declining quality of life, and erosion of public trust. Beyond mapping these obstacles, the model highlights where targeted interventions are most needed, serving as a practical tool for prioritizing reforms. The results suggest that unless current policies are revisited and localized models are designed, the true potential of these instruments to enhance the feasibility of urban projects will remain unrealized.

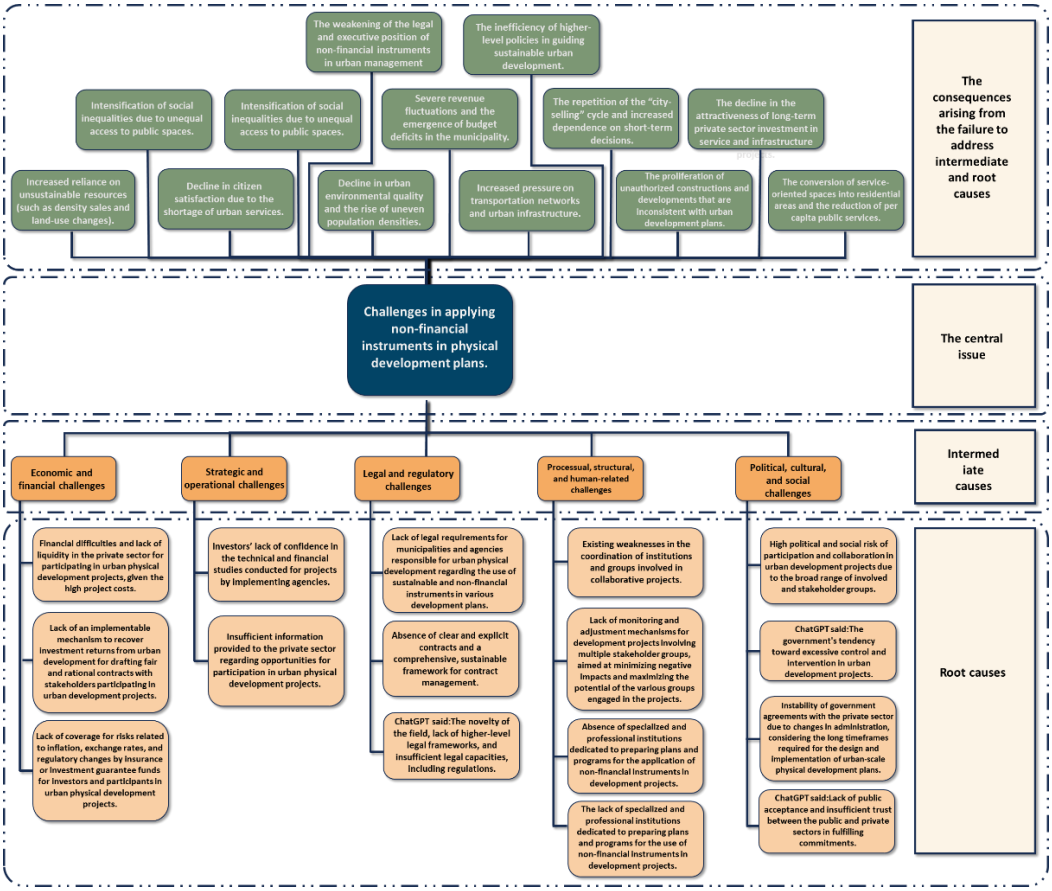

Fig. 7. Problem Tree: Barriers and Consequences of Non-Financial Instruments

Source: Authors (2025)

Evaluation of Non-Financial Instruments in Projects of Langarud City :Langarud is a city in Gilan Province with a population of 79,278 (2016 census). Its physical structure is defined by the traditional bazaar at the core, surrounded by historic neighborhoods and new peripheral developments**.**

To analyze the gap between development objectives and actual outcomes in Langarud, the city's higher-order planning documents were reviewed, including**:**

-The Comprehensive Plan (approved 2016)**,**

-The Rehabilitation and Renovation Plan for the Historic Fabric (approved 2004), and

-The Rehabilitation and Renovation Plan for the Deteriorated Urban Fabric (approved 2013)**.**

Based on these reviews, a set of key objectives was extracted, which served as the basis for the comparative evaluation of major projects in the city**.**

Thematic Area	Extracted Objectives
Population and Social	Define the city's carrying capacity based on potential for inner-city development
Economic	Develop the tourism sector
Physical and Accessibility	Regenerate target neighborhoods and improve physical conditions
	Enhance ease of access and reduce intra-urban traffic volume
Environment	Conserve and restore natural values
Decision-Making and Governance	Strengthen participation and cooperation in the urban management system

Table 8. Strategic Dimensions of Sustainable Urban Development

Source: Authors (2025)

The analysis of sixteen key projects in Langarud reveals diverse opportunities for applying sustainable non-financial instruments. These projects span a wide spectrum, including cultural and heritage regeneration, renewal of deteriorated fabrics, expansion of pedestrian and cycling networks, environmental protection of rivers, wetlands, and agricultural lands, and upgrading urban services such as transportation, waste, and public facilities. While they are aligned with the objectives of the Comprehensive Plan—namely sustainable development, spatial equity, and environmental

conservation—their implementation faces recurring challenges such as weak legal frameworks, institutional misalignment, lack of transparency in valuing development rights, and low levels of private-sector trust. Nevertheless, instruments such as Transfer of Development Rights (TDR), Public–Private Partnerships (PPP), contractual models (BOT, BOO, DBFO, etc.), and municipal bonds demonstrate strong potential to advance these initiatives without direct reliance on cash-based revenues. The comparative assessment indicates that each project requires a tailored combination of these tools, offering a practical pathway toward more resilient and sustainable municipal finance. The following table presents the overall assessment, outlining the degree of alignment with the Comprehensive Plan, the implementation status, and the potential of sustainable non-financial instruments for each project.

Project Title	Sustainable Development Goals (Social / Economic / Environmental)	Alignment with Comprehensive Plan of Langarud	Current Status and Results	Potential Outcomes of Using Sustainable Non-Financial Instruments	Proposed Non-Financial Instruments
Construction of cultural centers	✓ Social / ✓ Environmental	Land-use diversity, expansion of public spaces	Dispersed cultural centers, dependent on traditional financing	Increased private-sector participation, reduced reliance on cash resources	TDC, MDR, BOT, BOO, BOOT, DBOM, BLO, BOOL, PPP
Service provision on vacant lands	✓ Social / ✓ Economic / ✓ Environmental	Focus on infill development, preservation of peripheral lands	Underutilized vacant lands in functional nodes	Endogenous use of idle lands without horizontal sprawl	MDR, PDR, Development Rights Bank, Transfer Rights Office
Historic fabric regeneration	✓ Social / ✓ Economic / ✓ Environmental	Cultural heritage preservation, urban quality enhancement	Functional and physical decay of historic fabric	Reviving historical identity through investment and adaptive reuse	TDC, MDR, PDR, OM, ROT, ROO, MOOT, PPP
Protection of urban buffer and natural areas	✓ Social / ✓ Environmental	Green belt conservation, limiting uncontrolled expansion	Degradation of rivers, wetlands, agricultural lands	Safeguarding rivers/wetlands via development transfers	TDC, MDR, PDR, Rights Bank/Office
Central bazaar regeneration	✓ Social / ✓ Economic	Strengthening public spaces, preserving historic-commercial core	Physical disorder, service decline	Market revitalization with private investment, preserving identity	MDR, PDR, ROT, ROO, MOOT, PPP
Renewal of deteriorated fabric	✓ Social / ✓ Economic / ✓ Environmental	Consistent with physical, environmental, and access goals	Limited progress due to traditional financing	Accelerated renewal through development transfers and participation	MDR, ROT, ROO, MOOT, BOO, BOOT, PPP
Riverside pedestrian axis	✓ Social / ✓ Economic / ✓ Environmental	Public space network, urban connectivity, landscape	Pollution, poor use of riverside	Vibrant, safe pedestrian corridor with private participation	TDC, MDR, PDR, DBMF, DBFO, BT, PPP
Green corridor (river–wetland)	✓ Social / ✓ Economic / ✓ Environmental	Public space and clean transport network	2 km gap without safe route	Safe green corridor with tourism services	TDC, MDR, PDR, DBMF, DBFO, BT, PPP
Pedestrian network in historic core	✓ Social / ✓ Economic / ✓ Environmental	Transport enhancement, heritage preservation	Narrow, unorganized historic routes	Safer pedestrian pathways, improved environment	TDC, MDR, PDR, DBMF, DBFO, DBOM, ROT, BOT, PPP
Expansion of public	✓ Social / ✓ Economic / ✓ Environmental	Accessibility, service quality	Taxis as sole public	Fleet modernization, reduced pollution, improved access	OM, DBOM, ROT, BOT, PPP

Project Title	Sustainable Development Goals (Social / Economic / Environmental)	Alignment with Comprehensive Plan of Langarud	Current Status and Results	Potential Outcomes of Using Sustainable Non-Financial Instruments	Proposed Non-Financial Instruments
transport terminals			transport option		
Sidewalk rehabilitation	✓ Social / ✓ Economic / ✓ Environmental	Improved pedestrian access	Poor pedestrian infrastructure, underutilization	Increased walking, reduced car dependency	DBMF, DBFO, PPP
Bicycle network	✓ Social / ✓ Economic / ✓ Environmental	Clean transport	Lack of integrated cycling infrastructure	Reduced car use, improved public health	BTO, DBFO, OM, DBMF, DBOM, BOT, PPP
Agricultural land preservation	✓ Social / ✓ Environmental	Environmental sustainability, controlling sprawl	Rapid conversion to urban uses	Preventing land-use change, preserving greenery	TDC, MDR, PDR, Rights Bank/Office
Integrated wastewater network	✓ Social / ✓ Economic / ✓ Environmental	Environmental sustainability	Untreated sewage polluting rivers	Reduced pollution, healthier ecosystems	BTO, DBFO, DBMF, PPP
Relocation of landfill	✓ Social / ✓ Environmental	Wetland protection	Landfill near wetland, causing pollution	Relocation, ecosystem restoration, green space	MDR, PDR, BTO, DBFO, DBMF, PPP
Natural buffer restoration	✓ Social / ✓ Economic / ✓ Environmental	Environmental sustainability, control of sprawl	Encroachment on rivers and wetlands	Ecological restoration, stronger citizen–nature link	TDC, MDR, PDR, DBFO, DBMF, PPP

Table 9. Review of 16 Projects in the Comprehensive Plan of Langarud City
Source: Authors (2025)

CONCLUSION

The findings of this research, based on the case study of Langarud, are consistent with existing theories in urban governance, participatory planning, and spatial justice. The challenges identified were not only technical or operational, but largely systemic and structural, requiring multi-layered reforms in legal, institutional, cultural, and economic domains. Examination of 16 selected projects—ranging from historic fabric regeneration and farmland protection to bicycle networks and landfill relocation—demonstrated that non-financial instruments hold significant potential to mobilize urban resources without direct financial pressure. However, the absence of enabling institutional frameworks has limited their effective application.

Key findings include: - Legal dimension: Lack of independent and clear legal frameworks for instruments such as TDR, BOT, and other partnership contracts has led to hesitation in their implementation, reducing investor interest and creating uncertainty in Langarud's projects.

-Institutional dimension: The municipality lacks specialized offices and executive mechanisms for drafting and managing innovative contracts, exposing weaknesses in designing and executing non-financial instruments.

-Social and cultural dimension: Limited culture of participation, public distrust in municipal institutions, and lack of awareness of the benefits of these tools have hindered social acceptance. In Langarud, particularly in projects like the bazaar regeneration or river buffer protection, public awareness and trust between public and private actors remain low, limiting participation.

-Economic dimension: Economic volatility, absence of precise financial and cost–benefit models, and instability in fiscal policies prevent long-term private sector engagement in projects such as transport infrastructure and wastewater systems.

-Stakeholder engagement: Lack of intermediary institutions, conflicts of interest, and absence of localized successful models have obstructed sustainable partnerships. In projects such as farmland preservation or riverfront revitalization, these weaknesses were especially evident. Ultimately, the Langarud case reinforces that the obstacles do not stem from the inherent nature of non-financial instruments, but from the lack of a coordinated ecosystem—comprising legal frameworks, professional institutions, reliable data, and an active organizational culture—that restricts their successful application. If such instruments are applied within a reformed, integrated framework, they can facilitate a structural transformation in urban fiscal governance and enable a transition away from unsustainable revenue models. **Practical Recommendations:** Based on the findings, a set of recommendations is proposed at five levels to enhance the feasibility of using non-financial instruments in Langarud:

A) Legal and regulatory reforms

1. Develop dedicated and transparent legislation for tools such as TDR, BOT, and BOO, tailored especially for medium-sized municipalities like Langarud.

2. Revise existing laws to remove conflicts, simplify procedures, and facilitate private participation.

3. Establish specialized arbitration and dispute resolution bodies for urban contracts to increase legal security for all parties.

B) Institutional and managerial reforms

1. Establish an "Office for Partnerships and Non-Financial Instruments" within the Langarud Municipality.

2. Develop specialized units for financial analysis, land valuation, and contract management.

3. Introduce performance-based evaluation systems for municipal managers in achieving sustainable revenue goals.

C) Social capacity-building and cultural awareness

1. Design and implement educational and media programs to raise public awareness of non-financial instruments.

2. Enhance transparency in urban decision-making by publicly disclosing contracts, tenders, and financial reports.

3. Expand citizen participation in urban decisions through online consultation platforms and public meetings.

D) Economic and data-driven capacity building

1. Develop integrated GIS-based platforms for land valuation and economic analysis of projects.

2. Introduce models for risk assessment, cost–benefit analysis, and SROI (Social Return on Investment) for evaluating non-financial instruments.

3. Advance operational budgeting systems with transparent tracking of municipal revenues and expenditures.

E) Intermediary institutions and localized models

1. Establish “Urban Financing Innovation Centers” as intermediaries between municipalities, investors, and government institutions.
2. Document and disseminate successful domestic and international experiences to create replicable models and reduce implementation risks.
3. Design incentive packages for private investors, including investment guarantees, tax exemptions, and simplified licensing.

AUTHOR CONTRIBUTIONS

In this study, methodological guidance was provided by Zaker Haghighi; data collection was carried out by Baghdadi, and data analysis was conducted by Sedghamiz Haghighi.

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CONFLICT OF INTEREST

The author declares that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancy have been completely observed by the authors.

☐ **Positive AI Statement**

During the preparation of this work the author(s) have used Artificial Intelligence (AI) [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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☐ **Negative AI Statement**

The author(s) declare that no AI tools or services were not used or not highly applied during the preparation of this work.

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