Designing Urban Spaces in Informal Settlements Using Urban Acupuncture Approach (Case Study: Kooye Manbae Ab in Ahvaz, Iran)

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ABSTRACT: This study investigates the potential of a novel therapeutic approach to improve informal settlements, which is a highly localized healing treatment to regenerate urban spaces. The purpose is to find out how urban acupuncture can be applied to accomplish the empowerment plans of informal settlements. The process-oriented approach of urban acupuncture creates an appropriate context for the possibility of the community participation in different stages of improving public spaces. However, the social conditions and characteristics of the residents of informal settlements create challenges and require the use of special methods in dealing with the issue of participation. The first part of the research is based on formulation of an urban acupuncture framework for improving informal settlements. The theoretical finding of this part is applied in the second part of this research, which focuses on the public spaces of an informal settlement, "Kooye Manbae Ab" in Ahvaz, a city in Iran. The results showed that urban acupuncture as a small-scale, bottom-up approach, provides motivations for residents of such neglected parts of the city. Nevertheless, a combination of different participatory techniques should be applied to encourage and motivate residents to be consciously involved in the process of upgrading their environment.

INTRODUCTION

The emergence of informal settlements in cities and metropolises has grown over the past decades in developing countries. These settlements are a type of spatial accumulation of mostly migratory and low-income groups in vulnerable parts inside or outside cities that are created spontaneously without official permission of the city's legal institutions. The main approaches and solutions adopted to solve the problem of informal settlements in the contemporary situation is to empower them with emphasis on using existing capacities and social capital, collective learning, capacity building, public institution-building, community participation and paying attention to the opinions, wishes and priorities of residents (Lastra & Pojani 2018, Irandost 2011, Meth 2013).

Due to its interdisciplinary nature, urban design, creates the potential capacity to achieve comprehensive and targeted physical interventions in formal settlements. However promoting informal settlements are mainly addressed in the field of urban planning and management, and

fewer studies address the empowerment strategies, and experiences through urban design as an effective tool for launching a process of rehabilitation and regeneration (Tyrell 2008, Hernandez-Garcia 2012, Janches 2012). One of the approaches of urban design which is more flexible and can be applicable in informal settlements is urban acupuncture.

As an "urban design concept that looks at how small design projects can have a larger impact on the whole city", urban acupuncture is a starting point in creating or organizing public spaces in informal settlements. According to Jaime Lerner (2014), these small spaces have the potential to 'regenerate, improve, and create beneficial ripple effects' within urban environments. But the question is "what is the application of urban acupuncture in upgrading informal settlements?". Along with this question, the next question that arises is "how the residence of informal settlement encourages to participate in the process of designing small-scale projects?

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Due to growth of urbanization and expansion of informal settlements in Iran in the recent years, and the fact that planning and design interventions in informal settlements is one of the most important urban issues in Iran, this study is focused on Kooye Manbae Ab, the largest informal settlement in city of Ahvaz, the center of Khuzestan province in Southwest of Iran.

Intervention Approaches in Upgrading Informal Settlements

Informal settlements are unplanned damaged fabrics consisting of residential units constructed without proper technical requirements and lacking official certifications. Their residents are typically from low-income classes with a small urbanization background that have more social deficiencies and informal employment than the average dependent city. They are mainly located in inappropriate and hazardous areas such as railroad edges, dumps, swampy areas, landslides, and floodplains. As a result of inappropriate location, the living conditions in these settlements are mostly unhealthy and thus exacerbate environmental pollution and degrade the local ecosystem (UN-Habitat 2003). Upgrading programs are conceptualized as unbundled and part-time projects at the local level to provide a planned policy or approach (Wekesa et al. 2011). The idea of upgrading programs for informal settlements began in the late 1970s as a low-cost alternative to housing policy options led by the World Bank with the reasoning that the improvement of the standards of the housing environment is more cost effective than its destruction and displacement of the residents (Wegelin 2004, UN-Habitat 2006).

For a decade, efforts have been made by researchers and responsible organizations to document, analyze and characterize the upgrading programs carried out around the world. Huchzermeyer (2004) was one of the first who reviewed and analyzed the upgrading experiences in the world, especially in South Africa. He argues that different intervention approaches play roles in the success of upgrading programs. He also categorizes different methods of intervention in informal settlements into two main groups of 1) externally designed comprehensive upgrading, in which interventions aimed at transforming an illegal and non-standard environment into acceptable norms and standards in a relatively short period of time via massive investments that are often driven by the central government or foreign organizations; and 2) Support-based interventions including government-initiated and NGO-initiated support-based interventions.

In an effort to achieve a repeatable and sustainable model, based on the empirical method, John Abbott (2002a) categorize various experiences of the upgrading of informal settlements into three groups based on thematic approaches: progressive improvement model of infrastructure, community action planning (or microplanning) and comprehensive action plan. In the published Manual of the "Participatory Upgrading of Informal Areas", which is commissioned by the Ministry of Economic Development of Egypt, Abdelhalim (2010) presents a typology of various projects that have been held in the world under the title "Upgrading of informal settlements". The various upgrading methods presented in this document are: servicing informal areas, sectorial upgrading, and planning and partial improvement.

Interventions have advantages and disadvantages in terms of implementation methods or principles (Fernandes 2003, Sarafi 2005, Silva & Farrall 2016). As Albonico (2011) stated, the main purpose of urban design in the process of upgrading informal settlements is to use the process of physical changes as a potential factor in the development of these settlements, focusing on nature, form, dynamics of these settlements and improving them. The question of how urban design, as a medium, can be applied to connect residents of informal settlements to upgrade their environments can be extended to what kind of design can be useful for this purpose.

The Role of Urban Acupuncture in Upgrading Informal Settlements

The concept of urban acupuncture draws inspiration from ancient Chinese medicine by employing a targeted approach to urban planning and design. Analogous to acupuncturists who focus on specific points to trigger energetic circulation, urban acupuncture involves the identification and intervention at key points within the urban fabric. By doing so, it aims to catalyze a flow of energy that revitalizes and invigorates the larger urban environment, fostering a sense of well-being and vitality within the city as a whole (Lerner 2014, Lydon et,al. 2015, Lastera & Pojan 2018, Naghibi et al. 2020). "Urban acupuncture" is characterized on by actions that are relatively quick, easy, and non-bureaucratic (and thus easily implemented). The implementation of urban acupuncture initiatives, endorsed by the European Commission and orchestrated by the Education and Culture Program, constitutes a cogent illustration of this methodology's efficaciousness. The program enlisted the participation of six municipalities in executing urban acupuncture interventions. The targeted sites shared common challenges, including economic distress, unemployment, and a commuter-intensive populace traveling to urban centers for employment. Additionally, tensions with immigrant communities and the rise of anti-immigrant and nationalist sentiments had disrupted communal peace. In addressing these issues, urban acupuncture employed a multifaceted approach. It entailed meticulous research into the needs of local inhabitants and the integration of their viewpoints into the planning process (CULBURB, 2013). Targeted actions carried out by this approach change public spaces and improve community lives of resident (Bugaric 2018, Nassar 2020).

Based on existing literature, the framework set forth in this paper to relate the upgrading urban spaces in informal settlement with urban acupuncture takes into consideration Albonico (2011) belief to use the process of physical changes as a potential factor, CULBURB (2013) emphasis on urban spaces as more suitable places to accommodate the idea of healing spaces, Jaime Lerner (2014) idea of urban acupuncture together with John Abbott (2002a) categorization of upgrading informal settlements through goal-oriented community action planning (Figure 1).The application of this theoretical framework necessitates the identification of issues and deficiencies, the articulation of residents' requirements (which must be examined prior to the commencement of any urban acupuncture intervention through a methodology informed by principles of solidarity and collaboration), the determination of points of influence to guide the formulation of essential foundational actions for the revitalization of specific areas or spaces, and the provision of an implementation strategy. Continued feedback loops

Improving Shared Spaces

Informal settlement's intervention
Community action Planning- goal oriented

Urban acupuncture
Physical in points of influence changes

Urban Design as a medium
Participatory
non-bureaucratic
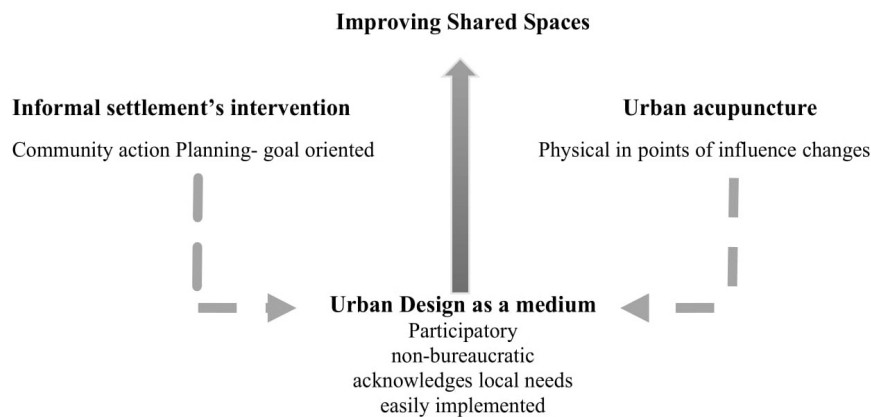acknowledges local needs
easily implemented

Fig. 1: The conceptual framework

allow the necessary readjustments and trust within the community. The method of participation in the planning and design of informal settlements is very important in the above process. Participation is understood as a process in which deprived people, are affected by resource allocation, planning and implementation of policies and programs in promoting the urban spaces of informal settlements (Imparato & Ruster 2003).Community engagement in design actions is based on the principle that "environments work better if people are enabled in the process of creating and managing environments rather than being passive consumers. Different levels of participatory design are expressed in several published works. Sherry Arnstein (1969) has used "the ladder of citizenship participation" metaphor, which includes staircases of citizenship control, delegated power, partnership, placation, consultation, informing, therapy, and manipulation. Wulz (1986) presented a sequence of different levels of participation based on the relationship between users and designers, which includes representation, survey, regionalism, dialogue, alternative, co-design, and self-decisions. An increasing number of scholars use a variety of terms such as 'informal actors' or 'non-planned planners" (Groth & Gorijn 2005), "grassroots innovation" (Seyfang 2007), "do-it-yourself urbanism" (Iveson 2013), and "do-it-yourself urban design" (Douglas 2014) to point at the active role of citizens and communities in the processes of urban design and planning. In actual practice, however, only a small number of countries have advanced to the point of formulating national-level policies and initiatives that are intended to address participatory procedures in a practical manner by cultivating a widespread sense of belonging among all parties concerned in informal settlements (Amba, 2010). One of the reasons is the complex nature of the participation in informal settlements, as it is imperative that local communities be recognized not only as an input source but as real partners in recognizing the problems, expressing their demands and actively participate in prioritizing their needs.

A wide range of techniques and tools for participating are available to designers, some of which are converted into standardized methods for use in collaborative processes (Kim, et al., 2020). However, the social circumstances of informal settlements make specific techniques, such as face-to-face communication and learning-based dialogue, more useful.

MATERIALS AND METHODS

Informal settlements are growing in recent decades inside and outside cities in Iran. More than one-eighth of the country's population resides in informal settlements, where there is daily suffering from inadequate technical, physical, social and economic infrastructures. By the law of "Preparing plans for organizing and empowering informal settlements" in 2002 and its amendment in 2007, national policies and programs aimed to realistically involve in upgrading informal settlements. Thus, studies were initiated to empower these settlements and empowerment projects have been completed for a number of metropolitan areas. But after a few years, it became clear that these projects face many challenges in practice. Zali et al. (2016) in evaluating the plan for organizing and empowering an informal settlement in Shiraz show that it has not been successful in achieving its goals and the most important reason is the authoritarian attitude in the process of preparing, approving and implementing the upgrading plan. Pourahmad (2018) also in his research on "Pathology of the Government Policies on Organizing Informal Settlements in Iran" mention the less-satisfying results of the applied policies and little change on the ground. They show that governmental policies have not led to social and physical sustainability. In summary, although different organizations have created urban plans that have attempted to control the growing number of informal settlements and improve the quality of living, most have not been implemented or have been unsuccessful.

Lack of resident participation in preparation and implementation of projects is an important factor in failure of these projects (Sheibani Moghaddam et al., 2020). In research on the willingness of residents of informal settlements in the metropolitan area of Ahvaz, Majidi &Lotfi (2010) showed that the residents are optimistic about the future of where they live and want to stay in their current residence. Moreover, 85.5% of the residents are willing to participate in empowerment projects. While popular participation creates the avenue to exchange and incorporate various perspectives into the decision-making process that affects these human lives, a participatory approach and group consultation were not taken into consideration in empowerment projects. Without understanding the shared feelings of residents in regard to their environment, they do not come to abandon the old, make

amends, right the wrongs and improve or establish new pathways for a better future. To minimize the elitist agenda inherent in the creation and implementation of such plans, the aim of this study was to demonstrate what the residents of informal settlement of "Kooye Manbae Ab" can do to improve their urban spaces.

Kooye Manbae Ab, is the largest informal settlement in terms of size and population. It is located within the city in the east part of Ahvaz (the center of Khuzestan Province in southwestern Iran). It has grown informally and illegally over time due to its undesirable natural and geographic location in a mountainous area (Figures 2 & 3a &b). The core of this settlement was formed due to the existence of water reservoirs and related facilities nearby, which led some of the workers to build residential buildings in the immediate vicinity of their workplace. Similar to most of the informal settlements, Kooye Manbae Ab, has a very compact, horizontally expanded structure with a high population density. The inhabitants have a dual nomadic-urban lifestyle. The first immigrants are still attached to their nomadic way of life while the newer are trying to urbanize their lives. The diverse and multifaceted social fabric makes it difficult to understand the order and rules of construction of this settlement. Therefore, it is necessary to recognize it from the point of view of those who have developed the area according to their own decisions and limitations. During a provincial government visit to Khuzestan province, the "Resettlement Plan of Kooye Manbae Ab" was approved in 2010. As a result, only a number of residential homes were demolished in the most dangerous parts and their residents were relocated to apartment units in Sepidar district in another part of the city, but the social and physical problems remained, its population increased and the lands were occupied again.

In this research, a multiple method was applied to cover all the necessary information for goal-oriented co-design through gathering the information necessary to define residents needs and priorities, recognize the hot spots of the area, and propose design solutions. The focused area is 12 hectares with a population of about five thousand. The applied participatory techniques are knowledge acquisition techniques, including observation and a walking tour for recognition of the site (node and path characteristics and their importance). Via a walking tour through the site with residents, the important information and relative recognition of the area was achieved. Prior to the walking tour, an initial session was held to divide the 43 participants (19 men and 24 women between 20 and 60 ages) into four groups and to indicate the departure and destination and the walking route for each group. Prior to field visits, an introductory workshop, was held in which participants were divided into smaller working groups. For each group, the starting and end points as well as the paths were pre-defined to ensure that all spaces were studied (Figure 4). The tour helped to identify the visual, physical, and functional elements and the narratives of the settlement as well as the focal points, places of events and children's playgrounds.
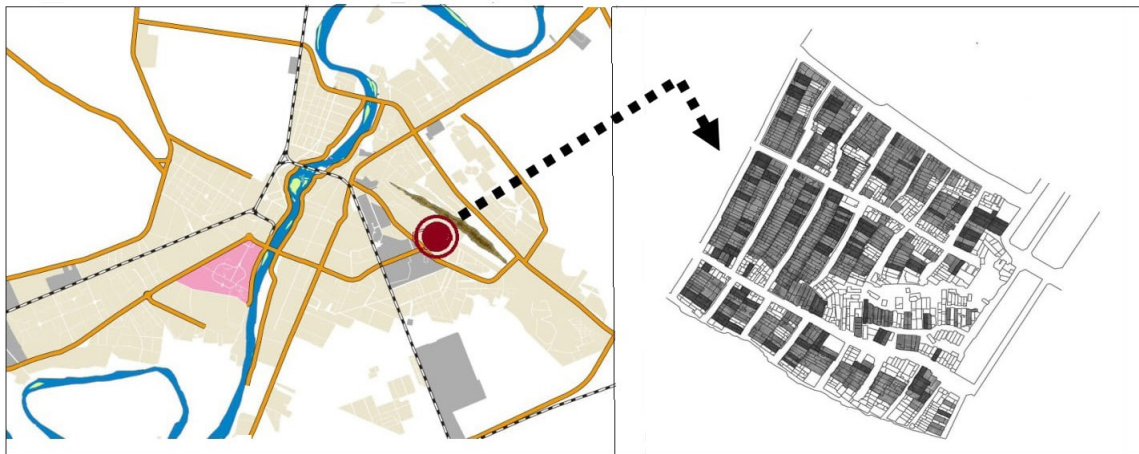

Fig. 2: City of Ahvaz and the Location of Kooye Manbae Ab

a) street view)

b) view of the buildings in sleep slopes)

Fig. 3 (a &b): Views of the Kooye Manbae Ab

Fig. 4: Examples of Paths and stations through walking tours with inhabitants

A semi-structured interview with those who had walking tour was carried to identify the strengths and weaknesses of the informal settlement. The interview begins with an informed consent about the recording. The conversations were focused on physical and functional characteristics of the district. They talk about the defects, opportunities and their preferences and desires about the place. Using local accent (Bakhtiari) during conversations lead to an informal and intimate relationship with the interviewees. The research sought answers to key questions. These included:

• Can you describe your district in detail?

• What do you particularly like about this place?

• What are the important problems you face in open spaces?

Participatory design workshops and group meetings, including the statement of vision, objectives, and proposing design alternatives were designed. Participatory design workshops as the main technique were held based on the following two main stages:

• Developing the imaginary prospect of the future of the area and recognizing the actions should be performed in points of influence.

• Providing design alternatives and selecting the most acceptable and applicable one. To achieve this stage, a three-dimensional model of the existing site with the aim of increasing participants' map reading skills was presented. It was a successful experience and encouraged the participants to continue the process. Computer training, specifically fundamentals of PowerPoint software during four sessions for those who volunteered in sub-groups (three groups of three and two group of four) was another applied technique which motivated the participants to involve directly in the design process.

• Providing a baseline map in PowerPoint environment with a number of graphic features that included a range of land uses and asking sub-groups to imagine and discuss what and where the intended land uses should be located on the base map in PowerPoint software. It should be noted that this stage was difficult for the participants because of the mass density and lack of empty lands. Adding abandoned and ruined buildings in hot spots of the map made it possible for participants to make decisions.

• Selecting the best proposed design alternative by group discussions.

RESULTS AND DISCUSSIONS

Recognition of neighborhood gathering places, local hangouts, children's playgrounds, and daily shopping areas via walking tours and field observations show residents' behaviors in the open spaces (Table1). In the absence of defined open spaces and public places, social life takes place on side streets, while the allocation of activities based on gender and age is quite evident. The results of the interview are shown in Table 2 and in figures 5 &6 in details. The main strengths of the district as stated by interviewees socially is the social cohesion existing in this settlement, especially against institutional decisions in regard to moving the residents to another area. Regarding physical aspects, the new houses are constructed with higher quality as a motivation to renovate houses.

Table 1: Activities in public spaces of Kooye Manbae Ab

Users	Locations	Activity
Women and young girls	Side streets, dead-end alleys, and sloping streets where traffic is low.	Conversations, doing some housework
Men	On the edge of the main streets (twelve meters) and intersection of streets	Conversations, shopping, selling small stuff (fruits and vegetables)
Men (mostly not belonging to the settlement), strangers	Around abandoned houses and in leftover open spaces	Drug peddler
Children mostly under ten	In alleys and dead-ends in front of their home	Doing school homework, playing
Teenagers (boys)	In alleys and open spaces on the steep slopes of mountains and cliffs	Conversation, football and Local games

Table 2: Strengths and weaknesses of the settlement

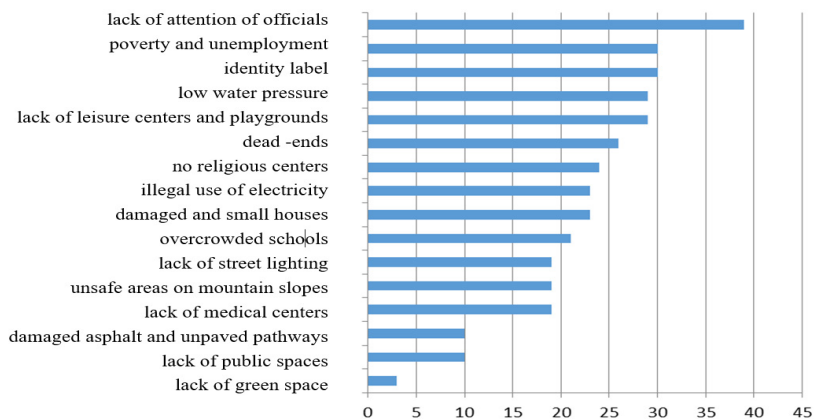| Subject	Potentials and strengths	Design problems and shortcomings
Physical	The trees along the streets and in front of the houses make a few beautiful streetscapes Houses that are decorated or have painted exterior doors have a great effect on improving the appearance of the street. A landscape of the city, which is especially beautiful at night. The planted trees beautify the street space. The precipice at the end of the 12-meter street has a beautiful view of the whole city and is beautiful in the evening and at night	The houses are old and need to be repaired, but renovation is not carried out by the residents , due to financial incapacity or carelessness. The quality of the buildings is very low in some parts, even those that are newly built. Due to the lack of space, the roofs of houses have been used as storage and a place for water tanks, thus creating an unfavorable view Cement platform in front of houses, which is usually used for sitting, creates an unfavorable view of streets. The asphalt of streets is uneven and damaged and unsuitable for children and elderly. There are no proper sidewalks or stairs on the street, so children move through the middle of the street, which is dangerous and has caused accidents. Due to the lack of stairs, the residents go down a steep slope to cross the main Street Unbuilt lands become places for garbage collection. The land dedicated to the construction of a husseiniyya (religious place), has become a place for grazing sheep
Social	Most of the neighbors have a lot of old community connections and support each other especially in regard to the decisions made by municipality about their district. A few new houses, which are built in the form of two floors with stone facades in less sloping streets, have motivated other residents to renovate their houses	A few shops, abandoned houses, and narrow paths leading to the mountain are hangouts for strangers and have caused street insecurity at night. Lack of street lighting has caused indefensible spaces and creates fear at night
Environmental	Close to mountains	Water pressure is low and is cut off for long hours in summer. The steep slope and precipices on the edges of some streets and paths are unsafe The mountain has weak soil and landslides occur constantly. Problems especially during heavy rain because of the lack of a drainage system

Fig. 5: Design problems and shortcomings of the settlement as stated by interviewees
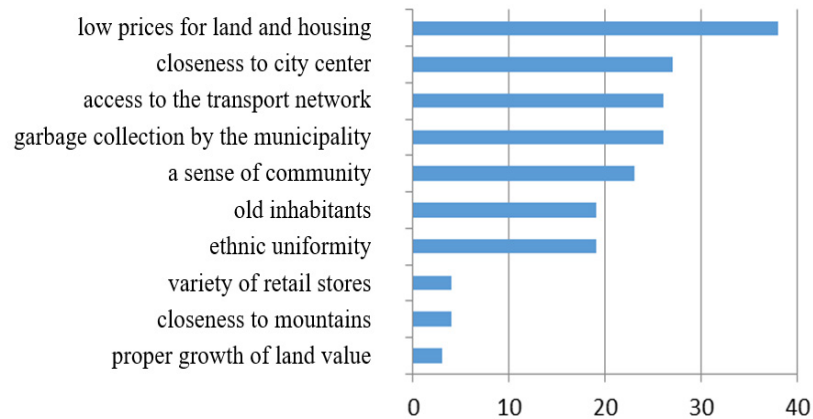
Fig. 6: Potentials and strengths of the settlement as stated by interviewees

There are several ways to define vision and formulate goals collaboratively, many of which are complex and time consuming. Here, a simple method was used to state the vision for the settlement and formulate objectives that, although not suitable for expressing long-term goals, can determine the values of participants and local residents During a three-hour session in a participatory workshop, the method was explained to the group of participants (two groups of four and three groups of three residents). They were asked to define the ideal Kooye Manbae Ab. Although different features were pointed out, they eventually agreed on the following perspective: "Kooye Manbae Ab, the only mountainous neighborhood of Ahvaz, is the place of the most beautiful urban landscapes with a distinguished identity. This neighborhood, which has provided an intimate environment for the Bakhtiaris living in Ahvaz, is a safe, green and comfortable place and a context for manifestation of the indigenous culture of its inhabitants. It provides appropriate urban infrastructure, redefining the physical-spatial structure and creating livable public spaces and proper and affordable housing, and has created a synergistic mix of residential, cultural, educational, recreational and commercial functions. housing has also been reconstructed and replaced by buildings that are durable and in harmony with the natural texture. Today's Kooye Manbae Ab is miles away from yesterday's deprived and dilapidated settlement, an achievement that has been achieved through the joint efforts of hardworking people, locally organized groups, and caring trustees. To get closer to this perspective, workshop participants were asked to discuss and answer the following questions in their groups. The results obtained from each groups combined and summarized as follows:
- What is good and should be preserved:
Views to the city of Ahvaz and mountains;
Strong neighborhood interactions;
The sense of community and uniformity;
Crowded and livable streets and spaces.
- What is good and should be added:
Open and Green spaces for leisure and games;
Suitable streets and sidewalks;

Safety.
- What is negative and should be removed:
Abandoned and ugly houses;
Dead-end alleys;
Unsafe and dangerous open areas on the slopes and precipices of the mountains;
Labeling the place with inappropriate words.
- What is negative and should be prevented from occurring:
Waste, pollution, sewage;
Driving cars through narrow steep passages;
Insecurity created by strangers and homelessness.
The main idea in designing the settlement was to enhance the life of residents by defining a coherent and safe physical and functional structure, creating an integrated and continuous network of public spaces. As mentioned before, four steps were considered in a one-day workshop to design the alternatives. The groups were asked to consider limitations and opportunities and to minimize interventions that lead to a lot of physical damage. After presenting a three-dimensional model of the area by the instructor, the groups were asked to participate in a basic computer training session and then provide their proposed land uses and public spaces. The alternatives presented by groups were discussed. They were compared and assessed based on how they responded to the vision and objectives (Figures 7 & 8). The alternatives show similarities in spatial structure of neighborhood and residents' needs and services, solve many of the current problems and shortcomings, and enable optimal option to be achieved (Figure 9).
The final participatory plan with the aim of making maximum use of opportunities, minimizing destructive physical interference, and using urban design principles to enhance public spaces increases implementation compared to government top-down plans. It provides sufficient incentive for resident involvement in project implementation, and by having positive impact can be a catalyst for further snowballing change in the neighborhood.

	Local park		High school		Parking		Gymnasia
	Electronic services		elementary school		Bus stop		playground
	Mosque		Health center		Market		Housanieh

Fig. 7: Examples of alternatives created by two groups of participants
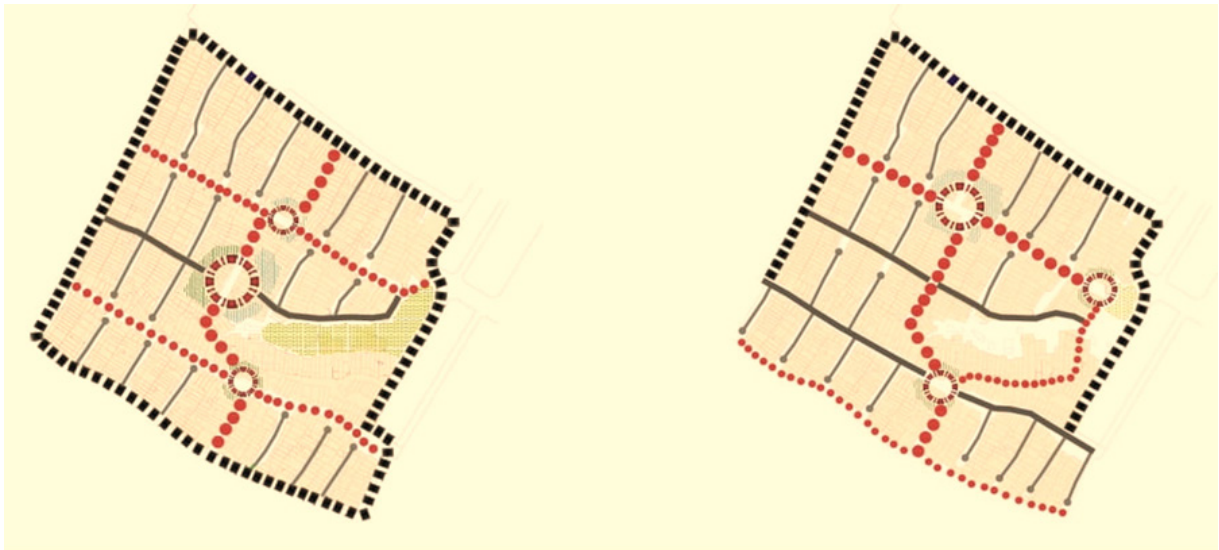

Fig. 8: Examples of alternatives created by two groups of participants in regard to open spaces (points and axes).

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Fig. 9: The optimal Plan of Kooye Manbae Ab

CONCLUSION

Urban acupuncture involves designers and citizens to stimulate rehabilitation of small urban spaces and places. This study examines an informal settlement in a city in Iran to show how this approach best defined as a healing treatment. At present, the main approach and solution to solve the problems of informal settlements, has been mainly adopted in urban planning and managements than in urban design. However, in recent empowerment strategies and experiences, urban design has been considered as an effective tool to launch the process of rehabilitation. It can lead to rational and coordinated vision and the use of social potentials in improvement of these settlements.

Nevertheless, choosing the right approaches to upgrade informal settlements as well as adopting appropriate participatory approaches and strategies will depend on the specific characteristics of the settlement and the community in which it resides, but implying the participatory process and the experience of Kooye Manbae Ab can be regarded as a practical experiment showing the active role of urban design in improvement of an informal settlement.

Experience from dealing with Kooye Manbae Ab informal settlement in the inner part of the city of Ahvaz has shown that it is necessary to use internal capacities and adopt participatory strategies from the very early stages of planning and design. The initial step is to attract residence participation, making the process more tangible and considerable for them.

As a practical experience, the application of walking tours at the beginning of the process stimulated the sensitivity of the participants to the physical and spatial problems of their neighborhood and encouraged them to continue the process. Computer learning process in workshops and its application in design, that are unlikely to be used in informal settlements, assures residents that their participation is important and that they can contribute the future image of their settlement. It encourages residents to cooperate with professionals and to present their design ideas and solutions. A collective design of urban spaces in these settlements cover essential issues and motivate residents to proceed for a change to rehabilitate their environments.

AUTHOR CONTRIBUTIONS

B. Aminzadeh performed the literature review, analyzed and interpreted the data, prepared the manuscript text and its edition.

CONFLICT OF INTEREST

The author affirms that there are no possible conflicts of interest concerning the publication of this work. Moreover, the author has diligently observed ethical considerations such as plagiarism, informed consent, misconduct, data fabrication and/or falsification, duplicate publication and/or submission, and redundancy in the research process.

REFERENCES

Abbott, J. 2002(a) An analysis of informal settlement upgrading and critique of existing methodological approaches. *Habitat International*. 26 (3), 301-315

Abbott, J. (2002b) *A method-based planning framework for informal settlement upgrading action for long-term change*. Washington DC, Island Press.

Abdelhalim, K. (2010) *Participatory upgrading of informal areas: A decision-makers' guide for action*. Cairo, PDP in Egypt.

Albonico, M. (2011) *Urban Design Framework for Informal Settlements Upgrade*. The Housing Development Agency.

Amba, K. (2010) The need for popular participation in Abuja: a Nigerian story of informal settlements, *Journal of Place Management and Development.* 3(2), 149-159

Arnstein, Sh. R. (1969) A Ladder of Citizen Participation, *Journal of the American Planning Association*. 35(4), 216-224

Bugaric, B. (2018) Urban acupuncture treatment implementing communication tools with youth in Ljubljana suburbs, *Urbani izziv*, 29

(supplement),95-108

CULBURB. (2013) *Centre for Central European Architecture.* Available at: http://www.culburb.eu/ (accessed 12 Maj 2013).

Douglas, G.C.C. (2014) Do-it-yourself urban design: The social practice of informal improvement through unauthorized alteration, *City Community*, 13 (1), 5-25

Groth, J., & Corijn, E. (2005) Reclaiming urbanity: Indeterminate spaces, informal actors and urban agenda setting. *Urban Studies.* 42 (3), 503-526 https://doi.org/10.1080/00420980500035436

Hernandez-Garcia, J. (2012) Open Spaces in informal settlements in Bogotá: expressions of attachment and identity. In H. Casakin and F. Bernardo (Eds.) *The Role of Place Identity in the Perception, Understanding and Design of the Built Environment*. USA: Bentham Science.

Huchzermeyer, M. (2004). *Unlawful Occupation: Informal Settlements and Urban Policy in South Africa and Brazil*. Trenton New Jersey: Africa World Press/The Red Sea Press

Imparato, I., & Ruster, J. (2003) *Slum upgrading and participation: Lessons from Latin America, Directions in Development*, Washington, DC, World Bank

Irandost, K. (2011) *Informal settlement and the metaphor of slum*, (in Farsi), ITC Organization of Tehran Municipality, Tehran.

Iveson, K. (2013) Cities within the City: Do-It-Yourself Urbanism and the Right to the City, International Journal of Urban and Regional 37 (3), 941-956

Janches, F. (2012) *Public Space in the Fragmented City: Strategy for Sociao-Physical Urban Intervention in Marginalized Communities*. Argentina, Nobuko.

Kim, G., Newman, G. & Jiang, B. (2020) Urban regeneration: Community engagement process for vacant land in declining cities. *Cities*, 102,749-762 https://doi.org/10.1016/j.cities.2020.102730

Lastra, A., & Pojani, D. (2018) Urban acupuncture to alleviate stress in informal settlements in Mexico, *Journal of Urban Design*, 23 (5)

Lerner, J. (2014) *Urban acupuncture*. Berlin, Springer.

Lydon, M., Garcia, A., & Duany, A. (2015) *Tactical urbanism: Short-term Action for Long-term Change,* Washington, D.C. , Island Press.

Meth, P. (2013) Viewpoint: Millennium development goals and urban informal settlements: unintended consequences, *International Development Planning Review,*35 (1), 5-13

Majidi, H. & Lotfi, K. (2010) Willingness of residents of informal settlements in the metropolitan area of Ahvaz to participate in empowerment projects, (in Farsi) *Quarterly Journal of Environmental Science and Technology*, 11 (3), 317-325

Naghibi, M., Faizi, M., & Ekhlassi, A. (2020) The role of user preferences in urban acupuncture: Reimagining leftover spaces in Tehran, Iran, *Urbani izziv*, 31 (2),114-126

Pourahmad, A., Rahnemaei M.T., Gharakhlou M., & Eskandari Noudeh M. (2018) Pathology Of The Government Policies On Organizing Of Informal Settlement In Iran, (in Farsi) *Urban -Regional Studies and Research,* 2(5), 29-44

Nassar, U. (2020) Urban acupuncture in large cities: Filtering framework to select sensitive urban spots in Riyadh for effective urban renewal, *Journal of Contemporary Urban Affairs (JCUA)* 5(1), 1-18

Sarafi, M. (2005) A problem named informal settlement, a solution named empowerment, (in Farsi) *Shahrdariha*, 6 (66) 23-35.

Seyfang, G., & Smith, A. (2007) Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental Politics,* 16 (4), 584-603, https://doi.org/10.1080/09644010701419121

Sheibani Moghaddam, F., Sarvar, R., & Asadian F. (2020) Evaluation of the success rate of organizing and empowering projects of informal settlements in Zahedan, in Farsi, *New Attitudes in Human Geography*, 11(2), 203-216

Silva, P., Farrall, H., (2016) Lessons from informal settlements: a 'peripheral' problem with self-organizing solutions, *The Town Planning Review*, 87 (3), 297-319

Tyrell, M. (2008) Urban design for capacity development in informal settlements [Online].

Fernandes, E. (2003) Illegal housing: Law, property rights and urban space in confronting fragmentation. Harrison, P. Huchzermeyer, M. & Mayekiso, M. (eds.) *Housing and Urban Development in a Democratizing Society*. South Africa, University of Cape Town Press.

UN-HABITAT. (2003) *The Challenge of Slums: Global Report on Human Settlements*. London, Oxford University Press.

UN-HABITAT. (2006) *Analytical Perspective of Pro-poor Slum Upgrading Framework*, Nairobi, UN-HABITAT.

Wegelin, E. A. (2004) Informal settlements and their upgrading: building on the lessons of three decades of experience, In Ministerial conference on *informal settlements in South Eastern Europe*. Vienna, Austria. 28 Sept. to 1 Nov. 2004.

Wekesa, B.W., Steyn, G.S., & Otieno, F.A.O. (2011), A review of physical and socio-economic characteristics and intervention approaches of informal settlements, *Habitat International*, 35 (2), 238-245,https://doi.org/10.1016/j.habitatint.2010.09.006

Wulz, F. (1986) The concept of participation, *Design Studies*, 7 (3), 153-162

Zali, N., Rahmati, Y., & Chareh N. (2016) Evaluate and critique of the reorganization plan and empowerment of informal settlements in Shiraz: Case study Mahdiabad neighborhood, (in Farsi).*Urban-Regional Studies and Research*