

## Research Paper

## Analysis of Effective Institutional Network on Rural Sprawling in Rural Settlements Around Hamedan

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**Citation:** Saeidi, A., Taleshi, M., Zia Noushin, M. M. (2017). [Analysis of Effective Institutional Network on Rural Sprawling in Rural Settlements Around Hamedan (Persian)]. *Journal of Rural Research*, 8(3), 454-469. <http://dx.doi.org/10.22059/JRUR.2017.63471>

**doi:** <http://dx.doi.org/10.22059/JRUR.2017.63471>

Received: 28 Feb. 2017

Accepted: 21 Jun. 2017

**ABSTRACT**

Land as a source of rural production requires wise management and protection. One of the physical phenomena in rural settlements around urban areas is rural sprawling phenomenon that results in land use changes in agricultural and horticultural areas in favor of other usages. Various factors affect this phenomenon, of which institutional and organizational factors and forces are the most important ones. This study aimed to recognize rural sprawling phenomenon and analysis of effective land management interventions and effective networks and their interactions or conflicts in rural areas around the city. Study area comprised 24 rural settlements around the city of Hamedan. The results showed that more than half of the institutional authorities have 5 types of conflicts with other institutions. One third of network links are controlled by state authorities and the main key agencies and policymakers and other institutions have passive, marginal and facilitating role in land use change. Investment opportunities around the cities, shortage of land in the city boundaries, employment opportunities and providing income, and massive demand for single-family units have accelerated the trend of land use changes. Attending to the urban areas of Hamedan and rural-urban relations and interactive policies with emphasis on the protection of residential areas can contribute to wise management of land.

**Key words:**

Rural sprawl, Network analysis, Institutional authorities, Settlements around the city, Hamedan

**Extended Abstract****1. Introduction**

One of the physical phenomena in rural settlements around urban areas is rural sprawling that results in land use changes from agricultural and horticultural lands to other usages. Various factors affect this phenomenon, that institutional and organizational factors are the most important ones. This study aimed to research rural sprawling phenomenon and analyze ef-

fective land management interventions and networks and their interactions or conflicts in rural areas around the city. The results showed that more than half of institutional authorities have 5 types of conflicts with other institutions. One third of network links are in control of authorities and the main key agencies and policymakers, but other institutions have passive, minor and facilitating role in land use change.

The mechanisms underlying activities and civic relations are effective not only on its immediate borders, but also on the whole area of the city is located by far-

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reaching and long-term outcomes associated with (Saidi, 2011:132). Meanwhile the villages located in the effective urban centers, especially villages located in the immediate hinterland of large cities and metropolitan areas with the highest physical and operational transformation (Saidi, 2010:336).

One of these developments in such constant situations is rural sprawl and rural land use change around the city. Rural sprawl has come in land use literature in 1970s (Engle, 2010:1). This phenomenon recently occurs in rural areas around the cities and away from urban areas. The most commonly quantitative definition of rural sprawl happens when population density decreases over time (Theobald, 2003:2). In other words, rural and urban areas sprawl occur where conversion of land to non-agricultural or abnormal uses is more than population growth rate. Volker Radeloff study shows that the number of housing units in West Asia (including Michigan, Minnesota, Missouri, Wisconsin, Illinois, Indiana, Iowa) have grown 146% between 1940 and 2000 and about one third of this growth occurred in non-urban areas (Engle, 2010:1-7).

Although the role of transportation improvement (Radeloff, Hammer, & Stewart, 2005), political and institutional factors (Daniels, 1999), retirees return to rural areas (Rural Policy Research Institute, 2003), rural population growth (Daniels, 1999), around cities worthy becoming, counter urbanization and environmental attractiveness and residential preferences (Gallent Juntti, Kidd, & Shaw, 2006) are effective in the occurrence of rural sprawl, with a bigger picture in perspective, all these factors take place in institutional and organizational context and under stakeholder theory.

## 2. Methodology

Research area comprised 24 rural settlements around the city of Hamedan. This area has agricultural use (agriculture and horticulture) and a variety of mountainous and plain villages. In this study, spatial analysis method is used to determine the amount and type of effective institutional and organizational interventions on rural sprawl and agricultural and horticultural land use changes.

## 3. Results

Institutional rules and regulations related to the conservation or land use changes around the city and rural settlements are numerous. By reviewing maps during the last

20 years in the periphery of the city and adjacent rural settlements and interviews with experts, it was found that Infrastructure Special Working Group has crucial role in institutional-organizational land use changes and different people are members of this working group. One of the responsibilities of this working group is examining requests for agricultural and garden land use change. Most agricultural and horticultural land use change requests are related to Jihad Agriculture, Industries and Mines Organization, municipalities and cultural heritage and tourism. It should be noted that the majority of requests for land use change relate to areas around the city of Hamedan. According to the survey, more than 60% to 70% of the requests comes from residential and construction of villa and garden wall fence and garden house. The results show that responsible institutions and organizations have middle level involvement of land use change and construction files, request and demands. Reciprocity bond index is more than 66% which is more than average and towards the top. Centralization index shows that almost two-thirds of network links are controlled by authorities and key agencies and policy makers. According to findings, organizations are divided into three categories; key decision-making institutions (policymakers), major facilitators institutions (developing- preservation) and minor institutions.

## 4. Discussion

The survey of physical-spatial changes from 1995 to 2016 indicate that sprawl in the suburban settlements of Hamedan has occurred at two levels: inside the authorized area of villages (rural buildings or the area of Rural Conduct Plans) and outside the authorized area of the village (outside the area of rural Conduct plans). All rural settlements around Hamedan have experienced sprawl change over the past 20 years. The villages of Ali-Abad, Poshtshahr, Qasem-Abad and Yekaneh have experienced a double expansion of the physical structure of the villages. Mehdi Abad and Hassan Abad Shorin and Cheshin (Keshin) villages have faced a three-fold increase in the size of the rural physical structure over the past 20 years. Other villages have expanded 20% to 90%, during this time. Outside the rural physical structure, there is a huge amount of diverse and conflicting uses that have disfigured these settlements and lands.

## 5. Conclusion

The results of network analysis and interviews show that a few powerful and policymaking institutions in the field of land use changes are major driving forces and actors. Although a larger number of institutional authorities intervene in any land use change or construction, work-

shops and the like, but the majority of requests are for some major institutions which are main key institutions and policymakers. Second, this index represents an organizational administrative practices and procedures and other institutions in working group sessions have decision-making and facilitator role to the most serious opposition and insisting on non-land use changes. It seems that inefficient structures cause lack of coordination and coherence between authorities. However, if such thing happens, other needs and preferences including the possibility of attracting additional funds, investors and the private sector protection, providing employment and so on may lead to land use change and workshops and buildings and sheds and other constructions.

### Acknowledgments

This paper was extracted from the PhD thesis of the third author in the Department of Geography and Rural Planning, South Branch, Payam-e Noor University of Tehran.

### Conflict of Interest

The authors declared no conflicts of interest.