# Natural Resources Management at the Local Level: Social Capital and Social Power in Local Beneficiaries' Network

# Mehdi Ghorbani\*

Assistant Prof., Faculty of Natural Resources, University of Tehran

#### Sareh Rasekhi

Assistant Prof., College of Agriculture and Natural Resources, Science and Research Branch, Islamic Azad University

### Jamileh Salimi

Ph.D. Candidate of Watershed Management, Faculty of Natural Resources, University of Tehran **Rabaneh Roughani** 

Ph.D. Candidate of Rangeland Management, Faculty of Natural Resources, University of Tehran

Received: 7/11/2014 Accepted: 11/2/2015

# **Extended Abstract**

### Introduction

Environmental problems are typically complex, uncertain, and multi-scale and affect multiple actors and agencies. This demands transparent decision-making that is flexible to changing circumstances, and embraces a diversity of knowledge and values. To achieve this, stakeholder participation is increasingly being sought and embedded into environmental decision-making processes, from local to international scales. Widespread acceptance and promotion of participation has partly been driven by increasing public scepticism about science, increasing knowledge and interest in environmental decisions and ongoing policy trends that emphasize sustain-able development and partnership working. In order to co-management of natural resources in rural areas, it is necessary to consider rangeland utilizers. Co-management, or the joint management of the commons, is often formulated in terms of some arrangement of power sharing between the State and a community of resource users. In reality, there often are multiple local interests and multiple

<sup>\*</sup> Responsible Author: mehghorbani@ut.ac.ir

government agencies at play, and co-management can hardly be understood as the interaction of a unitary State and a homogeneous community. Typically, co-management of common-pool resources, such as fisheries and forests, are depicted as some kind of power-sharing arrangement between the State and a community of resource users. This picture is based on an ideal image of the State as some kind of monolithic structure, and neglects the fact that not only communities, but also the State itself has many faces. By over-emphasizing the formal aspect of such power sharing arrangement, one might run the risk of disregarding the functional side of co-management which should be under-stood as a continuous problem-solving process. This is also necessary to pay attention to social capital of local stakeholders.

## Methodology

Social capital is often suggested as having a beneficial effect on the capacity of individuals to organize them effectively, and together with leadership, is often seen as crucial for the initiation and maintenance of environmental conservation and management at the community level. Today, social network analysis method could solve problems and challenges in this case for managers and planners of natural resources and characterize mathematical and quantitative indices. Recent social network studies have begun to contribute a greater understanding of how resource governance systems and their composite institutions function, and why some are more successful than others. Social networks are comprised of actors who are tied to one another through socially meaningful relations. These relations can then be analyzed for structural patterns that emerge among these actors. Thus, an analyst of social networks looks is youd attributes of individuals to also examine the relations among actors, how actors are positioned within a network, and how relations are structured into overall net-work patterns. Both the social network and resource management literature discuss ways in which networks influence individual actors and groups.

# **Discussion and Conclusion**

In this research, main aim is determine dimensions of social capital such as trust, cooperation and social cohesion among stakeholders in Kalate Rudbar in Damghan

region, called Gajin Dasht. In this customary area 33 utilizers use rangelands under co-license. First, target groups have identified according to field works and talks. Then, we have used questionnaires and produced matrixes and analyzed it in software. Indices in macro and micro levels have analyzed. According to these indices, social cohesion, sustainability of network and power of every person have characterized. The amount of social cohesion among stakeholders in Gajin Dasht is medium; therefore, social capital is also medium. Network sustainability is also medium and this is necessary to improve trust and collaboration. Some persons had more scores compare to others according to centrality degree and these could have better social power and controlling power. These should be local leaders for comanagement of rangelands and could develop trust through the network and increase social capital. Lack of key actors, co-management will not success. Centrality shows topology of each actor in network. Based to this research, network analysis could be a good method for natural resources management to gain social-ecological sustainability. In this area, for implementation of rangeland co-management should be improved social cohesion, trust and social capital among users because social capital is a main factor in the level successful of co-management plan. Social capital can be a fundamental indicator for sustainable rural development. We have discussed the relation between social network structure and function in natural resource management. We have furthermore highlighted network measures used to quantify structures in social networks and linked these to features identified as important in enhancing adaptive management of ecosystems. Therefore, this research indicates main indicators in the macro and micro levels of network that have intensive relation to the level successful of natural resources co-management.

**Keywords:** Rangeland co-management, Social network analysis, Network sustainability, Social capital, Gajin Dasht.

#### References

Bastani S., Raeisi M., 2012, **Social Network Analysis as a Method: Using Whole Network Approach for Studying FOSS Communities,** Journal of Iranian Social Studies 14 (2).

- Bodin, Ö. and Prell, C., 2011, **Social Network in Natural Resources Management**, Cambridge University press.
- Bodin, Ö., Crona, B., Ernstson, H., 2006, **Social Networks in Natural Resource**Management What's there to learn from a structural perspective?

  Ecology & Society, 11(2), P. 2.
- Cárcamo, F., Flühmann, R. and Gaymer, F., 2014, Collaboration and Knowledge Networks in Coastal Resources Management: How critical stakeholders interact for multiple-use marine protected area implementation, Journal of Ocean & Coastal Management, 91, PP. 5-16.
- Carlsson, L. and Sandström, A., 2008, **Network Governance of the Commons**, International Journal of the Commons, 2(1), PP. 33–54.
- Davis, J., Kang, A. and Vincent, J., 2001, **How Important is Improved Water Infrastructure to Microenterprises? Evidence from Uganda,** Journal of World Developed, 29, PP. 1753-1767.
- Ebrahimi F., Ghorbani M., Salajegheh A., Mohseni Saravi M., 2014, Social Network Analysis of Local Stakeholders in Action Plan for Water Resources Co-Management (Case study: Jajrood River in Latian watershed, Darbandsar village), Iranian Journal of Watershed Management Science and Engineering, 8 (25), PP. 47-56.
- Folke, C., Hahn, T., Olsson, P., Norberg, J., 2005, **Adaptive Governance of Social-Ecological Systems**, Annual Review of Environment and Resources, 30, PP. 441–473.
- Freeman, L.C., 1980, **The Gatekeeper, Pair-dependency and Structural Centrality**, Journal of Quality and Quantity, 14 (4), PP. 585-592.
- Ghorbani, M., Azarnivand, H., Mehrabi A.A., Bastani S., Jafari M., Nayebi, H., 2013, Social Network Analysis: A new approach in policy-making and planning of natural resources co-management, Journal of Natural Environment, Iranian Journal of Natural Resources, 65 (4), PP. 553-568.
- Ghorbani, M., Azarnivand, H., Mehrabi, A., Jafari, M., Nayebi, H. and Seeland K., 2013, Social System and Network Analysis in Rangeland Co-management (Case study: Rangelands of Nariyan village- Taleghan region), Journal of rangeland, 7 (1), PP. 74-85.
- Ghorbani, M., 2012, **The Role of Social Networks in Rangeland Utilization Mechanisms (Case study: Taleghan Region)**, Ph.D. Thesis, Natural resources Department, University of Tehran, 430 p.
- Ghorbani, M., Dehbozorgi, M., 2014, **Stakeholders' Analysis, Social Power and Network Analysis in Natural Resources Co-Management**, Journal of

- Rangeland and Watershed Management, 67(1), PP. 141-157.
- Holling, C.S. and G.K. Meff, 1996, Commands and Control and Pathology of Natural Resource Management, Conservation Biology, 10(2), PP. 328-337.
- Khatoonabadi S., Amini A., Mirzaali A., 2001, Preventive Factors of Herders Participation in Rehabilitation Designs of Aghghala Ranges in Golestan Province, Journal of Science and Technology of Agriculture and Natural Resources, Water and Soil Science, Isfahan University of Technology, 5 (1), PP. 39-55.
- Kroll, C., 2011, Different Things Make Different People Happy: Examining social capital and subjective well-being by gender and parental status, Journal of Ecological Indicators, 104, PP. 157–177.
- Kulig, A., Kolfoort, H. and Hoekstra, R., 2010, The Case of the Hybrid Capital Approach for the Measurement of the Welfare and Sustainability, Journal of Ecological Indicators, 10, PP. 118–128.
- Leahy, E. and Anderson, H., 2008, **Trust Factors in Community-water Resource Management Agency Relationships,** Journal of Landscape and Urban Planning, 87, PP. 100–107.
- Lemos, M.C., Agrawal, A., 2006, **Environmental Governance**, Annual Review of Environmental resources, 31, PP. 297-325.
- Lienert, J., Schnetzer, F. and Ingold, K., 2013, Stakeholder Analysis Combined with Social Network Analysis Provides Fine-grained Insights into Water Infrastructure Planning Processes, Journal of Environmental Management, 125, PP. 134-148.
- Mahmudian, H., 2002, Investigation of Level and Cause of Rural People's Participation in Construction Projects, M.Sc. Thesis, Tarbiat Moddares University, Tehran, Iran.
- Mariola, J., 2012, Farmers, Trust and the Market Solution to Water Pollution: The role of social embeddedness in water quality trading, Journal of Rural Studies, 28, PP. 577-589.
- Mousavi, M.T., 2007, Social Participation as a Component of Social Capital, Social Walfare, 6(23), PP. 67-92.
- Norberg, J. and Cumming, G.S., 2008, **Complexity Theory for a Sustainable Future,** Columbia University Press, New York, USA, PP. 155-179.
- Prell, C., Hubacek, K. and Reed, M. 2009, Stakeholder Analysis and Social Network Analysis in Natural Resource Management, Society and Natural Resources, 22 (6), PP. 501-518.

- Rahmaniazad, E., Larijani, M., Ghorbani, M., 2014, Analysis of Indigenous Ecological Knowledge and Social Network Learning in Managing Rangelands Sustainably (Case study: Lazur rangeland region), M.Sc. Thesis, Environmental Education, Human Sciences Department, Payame Noor University, Tehran, Iran.
- Rasekhi, S.A., Mehrabi, A.A., Javadi, A.A., Ghorbani M., 2014, **Social Network Analysis and Planning of Rangland Co-management,** Ph.D. Thesis, Science and Research Branch, Islamic Azad University, Tehran, Iran.
- Scholl, A. and Kai, S., 2014, Where Could We Stand if I had...? How Social Power Impacts Counterfactual Thinking after Failure, Journal of Experimental Social Psychology, 5, PP. 51–61.
- Van Eeten, M.J.G., D.P. Loucks, and E. Roe, 2002, Bringing Actors together around Large-scale Water Systems: Participatory modeling and other innovations, Journal of Knowledge, Technology, and Policy, 14(4), PP. 94-108.
- Vignola, R., Timothy, L., Daniels, R. and W. Scholz, 2013, Governance Structures for Ecosystem-based Adaptation: Using policy-network analysis to identify key organizations for bridging information across scales and policy areas, Journal of Environmental science & policy, 31, PP. 71-84.
- Wan, R., Cai, Sh., Li, H., Yang, G. and Li, Z., 2014, Inferring Land Use and Land Cover Impact on Stream Water Quality Using a Bayesian Hierarchical Modeling Approach in the Xitiaoxi River Watershed, China, Journal of Environmental Management, 133, PP. 1-11.
- Wellman, B., 1988, Structural Analysis: From Method and Metaphor to Theory and Substance, Structural Analysis: A network Approach, Cambridge university.

