The Social Sciences 11 (Special Issue 3): 6617-6627, 2016
ISSN: 1818-5800

Measuring Social Capital and Analyzing Social Structure of Participation and Trust: Network of Local Livestock Beneficiaries in Center of Iran

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Abstract: One of the most controversial issues among sociologists is how to define and measure social capital. In this study, the concept of social capital has been used to study the quantity and quality of social relations. The present study has measured the part of the cognitive social capital relating to values such as trust, participation and cohesion. The method of the study is based on the network analysis and the studied network includes all the local livestock beneficiaries in Yazd Province. Participation of local livestock beneficiaries is of great importance because of their critical role in the sustainable management of dry ecosystems, overcoming the limitations of the local environment, preserving habitations. Quantitative and qualitative information necessary for the study were collected through interviews and questionnaires of network analysis. Then through software of network analysis including UCI net and net draw, the relationships were analyzed using mathematical indices of density, size, link reciprocity and centralization and also the concepts of structural holes and cut points. Results indicate poor networks of trust and participation in between-group relationships of local beneficiaries having island social structure with fragile relationships influenced by multiple structural holes. Evaluation shows that the density index in both network of participation and trust was weak, indicating poor social cohesion and reduced resilience of livestock beneficiaries when facing with environmental stresses. The analysis of the index of link reciprocity indicates poor mutual cooperation and low stability of network of livestock beneficiaries in Yazd Province. Analysis of motioned indices shows that the relations structure of this community suffers from a social disorder. High centralization of central actors in internal links rather than in external links is a factor preventing the formation of intermediate relationships at the macro level of yazdi rancher's network. Absence of these people with appropriate distribution has reduced creativity, social cohesion and innovation necessary in dealing with environmental problems especially drought.

Key words: Social capital, participation, trust, network analysis, local livestock beneficiaries

INTRODUCTION

In the last decade the concept of social capital has become one of the most widely used concepts in the social sciences. The widespread use of the term social capital and debating over it in various areas of the social sciences, economics, political science, natural environment and discussion of sustainable development indicate the acceptance of the inevitable role of this type of capital and the need to study and measuring it besides other types of natural, physical and human capitals.

Social capital can be defined with different phrases found from sociologist's points of view. Coleman argued that social capital is defined by its function and is not an independent entity but a collection of different elements, having two common characteristics, all of which include some social structures and some of the actor's functions facilitate the scope of structure (Coleman, 1990). Social capital in many sociological researches is a network of social interactions between individuals affecting individual behavior and can lead to social cohesion, confidence, desire to participate in social activities and participation (e.g, Putnam, 1995; Veenstra, 2000). With this point of view, social capital is networks of relationships based on cooperation in a society which facilitates solving problems requiring collective action (Brehm and Rahn, 1997). Therefore, according to other researchers, including Paldam (2000) important components of social capital such as trust and partnership connect social networks communities.

Lawson *et al.* (2001) have suggested that social capital in emergencies acts as a mechanism supporting people and creating a sense of security, lack of which is a key factor of social disorder. Social capital within the scope of environmental and natural resources (such as livestock management, rangeland management and water

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resources management, etc.) include resources or benefits resulting from beneficiarie's relationships whose participations place them in formal or informal local networks. The interactions of beneficiaries not only develop communication resources but also produce collective benefits for beneficiaries and stakeholders, active in this area. These benefits that can be considered as social capital are those primary benefits such as the developing collective cooperation when facing natural disasters (e.g., drought, floods), productivity growth and the production of human and material capitals in projects that are of mutual benefit and environmental activities, as well as those ultimately generated benefits which are the output of strong relationships between participating groups inside and outside of a local community (i.e., social capital within the group, between the group and the connector) and contributes to social stability and ecological sustainability of a geographic area. The relations between individuals in social communication network of beneficiaries of Yazd rangelands concerning animal husbandry represent participation in facing with difficult situations of dry ecosystems. Despite all the difficulties and severe natural constraints such as limited rainfall and the drying up of water resources, cooperation and collaboration between local residents have preserved habitations and the nature. In recent years, weakening the network of human relationships has fundamentally influenced both social order and ecological order. So that, the increased social conflicts over development and utilization of water resources and rangelands rather than social participation of beneficiaries has had numerous natural losses. Indiscriminate digging of illegal wells, competition in the exploitation of water resources, loss of underground water supplies, lack of attention to the ecological potential of rangelands, destruction of rangelands, aggression of industries and mines owner against rangelands are some instances of these natural losses. In the meantime, the development of trust and mutual relations between bneficiaries, including livestock beneficiaries is a key factor in participatory management of water resources (Leahy and Anderson, 2008).

Investigating the network of trust and participation and recognizing the structure of relationships in this study can be effective in solving the problem ahead. To this end, the present study has investigated the quantity and quality of social relations in the community of beneficiaries of livestock in Yazd Province. Examining components of social capital including trust, participation and social cohesion in the network of relationships, this study has analyzed the existing challenges in the structure of social relationships of these beneficiaries using network analysis. The aim is to determine an optimal network of relationships between livestock beneficiaries of Yazd rangelands through adding some relations of local beneficiaries to the participatory management network of water resources.

Literature review: In recent decades debating over the nature of social capital and levels associated with it has been one of the the most controversial issues in sociology. Regard to the division of social capital, different scientists from their own perspective have considered a particular analytical level for the individual commodity (Fukuyama) or public commodity (Coleman), or both (Onyx and Bullen, 2000) the issue which has been controversial. Based on this and other reasons such as the changing nature of social capital over time (disturbing the balance of formal and informal organizations), creating a unit scale of social capital has been complicated. Therefore, the importance of social capital, higher than individual level is that it can produce public commodity that all members of society can use. In fact, social capital contributes to the realization of collective action through increased costs of separation, enforcing strong norms of trade-off and facilitating the flow of information (Leonardi, 1993). To avoid confusion, contemporary scholars have used useful criteria and replacements such as trust, confidence in the government, membership in networks and coalitions and social movements to measure social capital (Woolcock and Narayan, 2000). In the meantime, categories contribute to the transparency of the issue. Krishna and Shrader, for example have divided social capital into two dimensions of cognitive and structure. The structural dimension refers to the performance of formal and informal local institutions while cognitive dimension refers to values, beliefs, attitudes, behaviors and social norms. They believe that these values include trust, cohesion and participation which are common among the members of a society. Considering the stated points, in the absence of comprehensive indicators, confidence can be an acceptable one (Glaeser *et al*., 2000). Trust and participation relationships can be due to the role of trust in facilitating collective behavior, creating a social space based on participation and taking note of collective interest (Zmerli and Newton, 2008).

Sociologist's consensus on confidence indicator among others to measure social capital may be due to the necessity and importance of this component in developing continuous social relations. In various studies, including analysis of participatory management of natural resources, social network analysis based on modeling the relationships between the actors has been the milestone of the issue (Eeten *et al*., 2002). The importance of this issue is that that the social organization

of the groups can be understood through studying their structures and relations. Interactive network analysis and structural features of actors in the form of network analysis which include various theories, techniques, tools and concepts, provide useful information that would pave the way for cooperation and collaboration of beneficiaries in natural resources. The chain-like relationship of these concept can be explained thus the cooperation between actors, stemmed from the social trust in areas of natural resources (such as rangelands) and in different forms of receiving information, exchange and cooperation in various associations can result in influencing other individuals in the network; strengthening their social capital in the network can allow the successfulness of participatory management in natural resources. As mentioned, communication network analysis, assessment of trust and participation in a community have critical roles in understanding the social organization and the structure of its relations with which this part dealt. The concept of social network was first introduced by R. Radcliff brown in 1940 in a letter to English anthropologists (Radcliffe, 1940) and then in the mid-50s this concept was used by the boot and Barnes. Network analysis approach which originates from basics of graph theory and network theory, is an approach to study social structures so that, the communications between individuals and features of these relations are studied. In short, this approach can be used to find individuals, groups, units with a central role; to find obstacles, limits, structural holes, isolated units; to identify opportunities to intensify the flow of knowledge in the functional and organizational boundaries; to strengthen the existing communication channels; to increase awareness of the importance of informal networks and ways to increase organizational performance' to enhance creativity and learning and to improve strategies. Researchers have tried to use this approach and analyze the relations of organs or local communities operationally to offer suggestions and solutions to solve the problems of this area. For example, it can be referred to Mandarano (2009) who studied the impact of social network on achieving a successful participatory planning and showed that organizations, overcoming differences, were able to build new relationships and thus new capital. The present study emphasizes the importance of network analysis and its combination with analyzing other dimensions of social capital in further studies. How beneficiaries are socially linked is an important factor in politicizing, predicting, controlling and sustainable management of rural change that has been the focus of researchers. As an example studying indices of density, degree centrality, betweenness centrality by Prell *et al.* (2009) in England shows that actors having high centrality are critical for developing mediate communication and also using network analysis it can be decided to select which individuals to manage natural resources in future. Generally, actors having high centrality and high-degree communications have more social power in the society. High social powers in these actors due to their effective social influence, attract public trust of a local community and therefore are more able to advance social goals and implement management plans of natural resources. Naturally, actors with low centrality have lower influence so accurate recognition of actors is an important factor in successful participatory management. Network analysis help sociologists access hidden dimensions and reveal the truth of human relationships interactions. Network analysis has helped in studying structural models of network relationships to achieve an accurate assessment of the actual behavior of actors and their ability to manage environmental challenges. Results show that managing network with various structures of relations density, continuity degree, internal connections of sub groups and centrality degree is not the same (Bodin and Crona, 2009). Studies on water management show that considering the different water consumption by various beneficiaries that are often in conflict, network analysis can reflect an in-depth insight into power relations and constraints facing the institutional management and social relationships (Hiwasaki and Arico, 2007).

MATERIALS AND METHODS

This part of study deals with introducing the studied area, the method of network analysis and the examined indices.

The study area: The area under study is Yazd Province located in 29°, 35 min-35°, 7min of North latitude and 52°, 50 min-58°, 16 min of east longitude. In this ecological border local beneficiaries of livestock living in 719 villages of Yazd province in an area of 3.6 million hectares having a grazing license (n = 1971) were studied. The method used in this research is complete network analysis. In this method census is conducted for population relations of actors instead of sampling method. All the involved beneficiaries were studied in order to correct politicizing which was required by managers and planners. The individuals under study were ranchers, obtained grazing license from the department of natural resources organization and were legally grazing sheep and goats in a certain area of rangeland in a local and traditional way. According to data audited by the end of 2014, the average area of rangeland of each grazing license in Yazd Province is 1861 ha. The number of livestock existing in Yazd is 528565 and the average number of ranchers in each rangeland is 7.4.

Questionnaire of network analysis in this research: Social network analysis studies the relations between certain elements (individuals, groups, organizations, etc). Its important feature is that it considers communicational and network data in the analysis. Communicational data is the special relationship between a pair of elements and it is possible that network generates from this pair of elements and their relations. Using a questionnaire of network analysis the present study deals with studying the relations of trust and participation in local livestock beneficiarie's network in Yazd which have received grazing license from a legal center (Leonardi *et al*., 1993). To identify beneficiaries and receive communicational data 2 methods were applied. in the first method a list of all livestock beneficiaries of Yazd was made and respondents were ask to choose those names in whom they trust and in another list choose those names with whom they have participated in managing water resources at rural, original or province level. The second one was snowball method in which beneficiaries introduced new individuals who were not included in the initial list. These two methods are complementary and in order to obtain the most information were used. This used method often led to identify and link to other important people and to introduce key beneficiaries participating in water management and having key roles in managing of water resources. These two complementary methods were used to obtain the most information. The first method can be performed more quickly than the second one but requires skill and knowledge of researcher (Scott, 2012). The required data was collected in the form of 5-level Likert scale (very low, low, medium, high and very high) to identify quality status of trust and participation indices.

In the final step, after forming and entering data matrix, data was analyzed and graphs were drawn using UCINET (version 6.611) and NetDraw (version 2.159) softwares.

The indices of network analysis in this research: In the present study concepts of cut points and structural hole were used to study the structure of the network and indices like density, size of the network, link reciprocity and network centralization were used to analyze the statuses of trust and participation. Here indices, concepts and the relationships between them are briefly introduced.

Density: It shows the ratio of all existing links to all possible links. The number of possible links can be detected based on the number of actors and the number of existing links is the very size of the network that represents the links formed in the studied networks. The relationship that raises here is that the more the size of the network increases, more dense the network would be, the density helps the network be more cohesive. The relationship between density and structural cohesion is built on the same basis because structural cohesion index includes links that lead to the most and basic communications and eliminating them can cut the communication (Moody and White, 2003). The index shows the minimum number of actors that if removed would disconnect the communications in the network (Moody and White, 2003). In the case of disconnection of communications of several links, fixed holes are developed that can be filled by connecting a few links. the concept of the structural hole that is negation of the concept of density, links with the idea of social capital, since actors who are mediators between different groups have a direct role in creating dense connections between actors and groups of a network. The more these links are dominant, the components of trust and participation become stronger and thus different levels of social capital rises and participatory management is developed (Leahy and Anderson, 2008). There are actors whose roles are more critical than others so that, eliminating them can divide the network into two or more disconnected parts.

To determine these vulnerable points, elimination of which causes division of the network, blocks and cut points indices are used. Networks without such points have high densities in their relationships. Social researchers measure the role of an actor using degrees. Degrees show the number of communication. However, besides the quantity of communication, quality of communication is also important in network analysis.

For this purpose, there are several indics studying this quality. For example, in studies networks, the more the index of link reciprocity is, the more trust and participation will be and thus the more stable the network will be (Leahy and Anderson, 2008). Another index which is important at the whole network is centralization, representing key actors in a network. Centralized networks have high-percentage links on the basis of one or more actors. Decentralized networks are those having low diversity in the number of actor's links.

RESULTS AND DISCUSSION

Results of the study related to density, reciprocity, network size, cohesion status analysis and social capital in the network of local livestock beneficiaries in Yazd Province: The results of the density index analysis in the whole network of Yazdi ranchers in trust link and

participation link are 38.2 and 34.4 %, respectively which indicates poor confidence and participation of local livestock beneficiaries in Yazd Province. Low trust between livestock beneficiaries has led to low participation and thus poor social cohesion in the process of participatory management of water resources and livestock. The results show that the process of participatory management has low cohesion and social capital. Low participation and trust are two important factors indicating that. So, basic and radical measures, including identifying and solving barriers to participation, strengthening social cohesion and appropriate promoting measures in order to increase the density index are clearly required.

An important point understood from density index is that because of its lowness, the resilience of Livestock beneficiaries against environmental stresses (factors such as drought,) has also come down and it can be expected that comprehensive measures which increase the density index, also increase the resilience of the local community against environmental changes. In the index of network size which indicates the number of existing links, among all the possible links, trust network has built only 18140 links and participation network has built only 12120 links, nearly one-third of links are expected and highlight the need to enhance this level to the optimal level. The reciprocity index which also was analyzed in this study, was 37.1% in participation link and 43.9% in trust link that indicates the stability of networks are respectively week and average. One reason for the success of management project of rangelands and livestock is the collective and mutual cooperation between individuals, known as social trade-offs. Examples are included in shared rangelands and collective participation in the supply and development of livestock water resources which need to be strengthened. Increasing indices like the density index it is expected that social capital is strengthened and social resilience to problems of water restrictions that has affected livestock beneficiaries is also increased. So, through pathology of the issue and working to remove barriers to mutual cooperation reciprocity index percentage can get close to its optimal level Table 1.

The results of network centralization index in the network of local beneficiaries in Yazd Province: The centralization index which has been shown in percentage in this study, as mentioned before is the percentage of the network which is enclosed by a limited number of central actors. The results obtained from this index which is presented in Table 2, indicate high percentage of centralization of external links than internal links.

This result makes clear a few points. First, an overall comparing of internal and external centralization indicates that receiving trust and participation (network centralization in internal links) has a better status than spreading trust and participation (network centralization in external links). And also in both networks of participation and trust, given the high levels of centralization in external link in proportion to internal link, central actors have important roles at the network level. Secondly, a high degree of centralization in the network has decreased beneficiarie's participation since in the whole network high-percentage link has centralized only on one or a few actors. However, participatory management requires cooperation links to be spread in the whole network until it is not limited only to a few actors.

Visual analysis of network structure of participation and trust of livestock beneficiaries in Yazd Province: As mentioned in the previous section, outlining the networks of participation and trust allows visual analysis. Due to the high number of data, the initial graphs drawn in both networks are like convoluted webs which can limit visual analysis (Fig. 1 and 2).

These two figures represent a dense network of people and seemingly with strong links in some areas, but according to the data analysis and based on the indices mentioned in the previous section it was found that links of these networks do not have high density and reciprocity. In these two figures, all nodes are shown with circles or squares and with initials representing their names. The nodes are connected by edges, illustrating their relationships with other individuals. These convoluted webs make the analysis impossible for the researcher. Net draw was used in this study to better organize the network and to make the network exit from

Table 1: Indices of density, reciprocity, network size in the network of trust and participation

Socio-ecologic border	Kind of link	No. of individuals	No. of possible links	Density (%)	Reciprocity (%)	Network size
Yazd rangelands	Participation	1971	35232	34.4	37.1	12120
	Trust	1971	47487	38.2	43.9	18140

Table 2: Network centralization based on external and internal links

Socio-ecologic border	Kind of link	Network centralization based on external links	Network centralization based on internal links
Yazd rangelands	Karticipation	49.4	38.7
	Trust	46.5	34.9

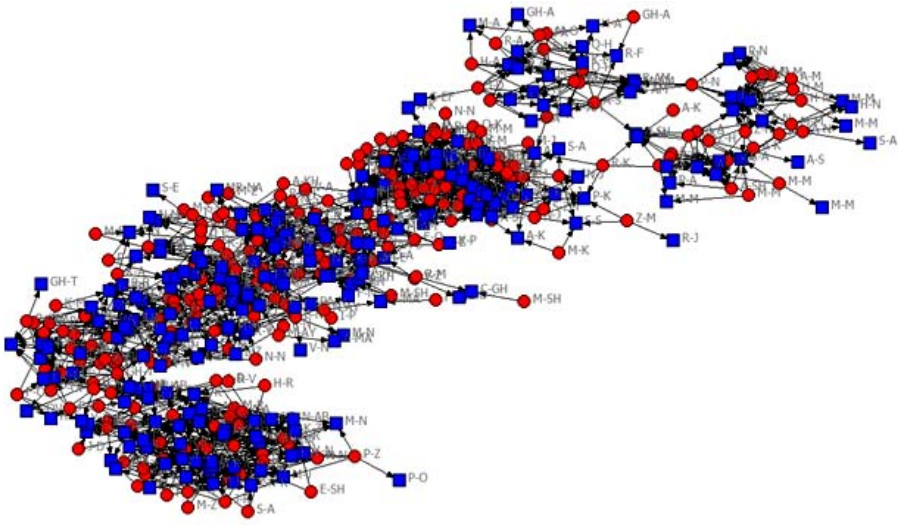

Fig. 1: Presentation of convoluted webs of participation network of local livestock beneficiaries in Yazd

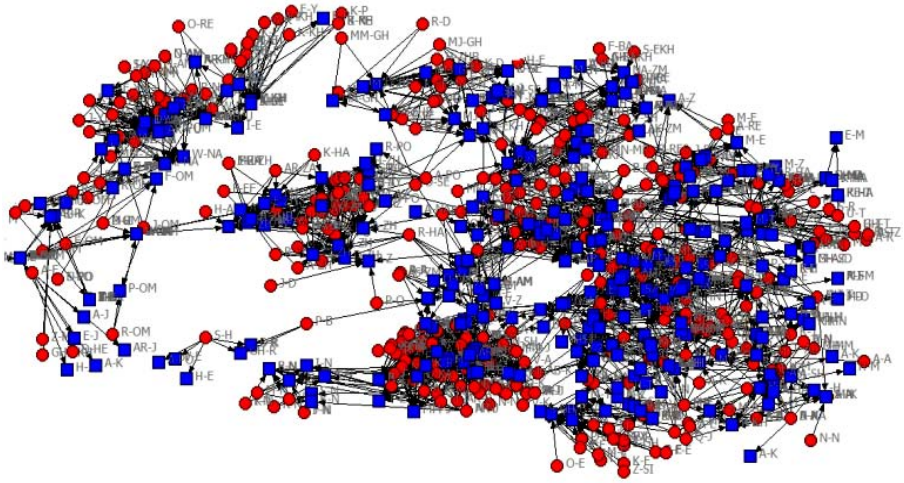

Fig. 2: Presentation of convoluted webs of trust network of local livestock beneficiaries in Yazd

the chaos and through better presentation make visual analysis passible. Figure 3 and 4 present the networks with better arrangements. As it is clear in these two figures, networks are seen small and in the form of separate clusters (separate groups), sometimes related to each other through weak links and form bigger networks of individuals or in some cases are seen as islands separated from the whole network. Island status, having no relationship with other communities is seen especially in the social structure of participation network (Fig. 3). The empty spaces demonstrate the division of beneficiarie's community into various groups that in most of the cases are independent of cooperation. In some cases, some individuals who are mediators have connected several clusters to each other. In fact, these people have been communicational bridges between clusters of the network (Burt, 1999, 2000, 2002). These people can be leaders or anyone having top social influence who are able to fill the existing gaps. Even in large geographic distances including some geographic regions in Yazd Province having no roads, communications have been built by a person or a link. Network analysis allows detecting and identifying these individuals. In Fig. 5 and 6 and these people have been distinguished with blue spots. these individuals have been identified in both networks especially trust network

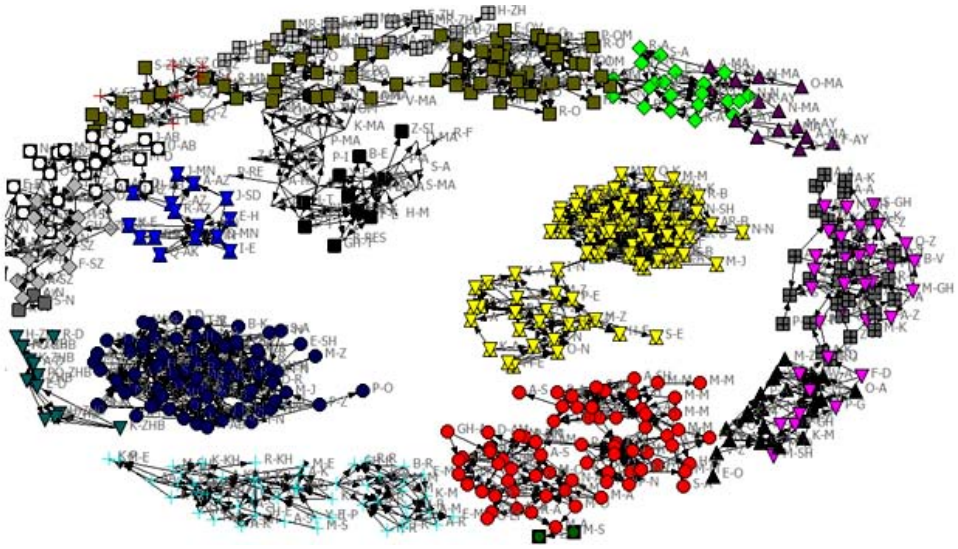

Fig. 3: Presentation of separate clusters formed in the participation network of local livestock beneficiaries in Yazd

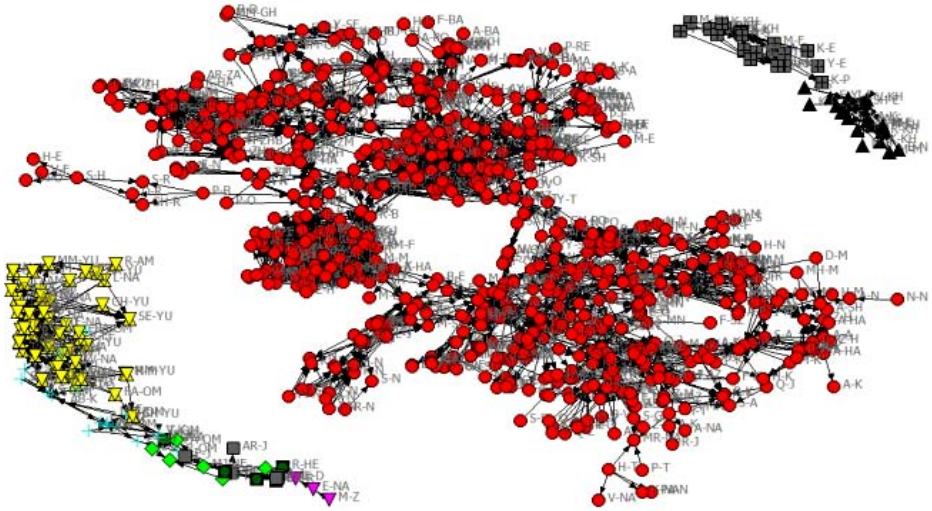

Fig. 4: Presentation of separate clusters formed in the trust network of local livestock beneficiaries in Yazd

and can be the basis for social policy maker's planning in the development of participatory management of local communities in the areas of natural resources of Yazd Province. The role of these people is of great importance especially in accessing information and developing participatory management policies between livestock beneficiaries community. These people in the role of mediators between different clusters often form weak links. This is in line with the study by Granovetter (1973) in which he argued that information could be received and flow provided that the communicational bridges were weaker than strong links. In the present study, the communicational bridges formed between big clusters of livestock beneficiaries are three which are weak with respect of link strength. The interesting point in the present study is that the very communicational bridges have not been formed between various separate clusters. The number of clusters of trust network (Fig. 4) is lower than those of participation network (Fig. 3). Given the more cohesion in the trust network (having integrity and less discontinuity), it is hoped that participatory projects will implemented successfully.

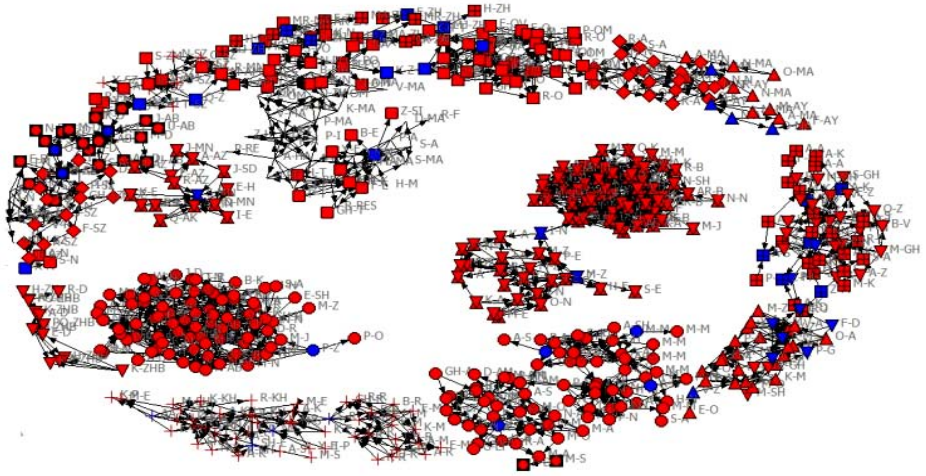

Fig. 5: Presentation of cut points and structural holes in the participation network of local livestock beneficiaries in Yazd

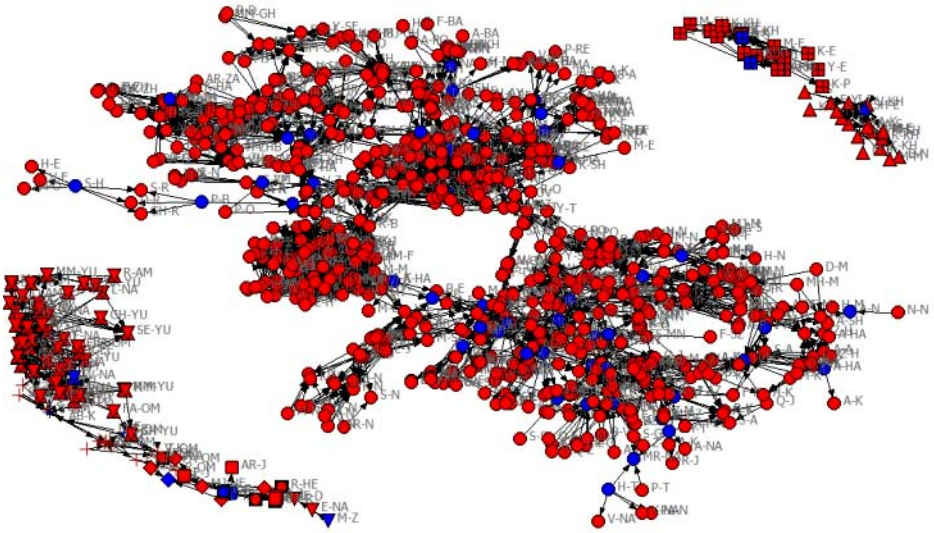

Fig. 6: Presentation of cut points and structural holes in the trust network of local livestock beneficiaries in Yazd

In the field of access to information, despite the communication intervals Burt (1997) raised the term of "structural holes" between groups. These structural holes can be seen due to the formation of separate clusters in the network of livestock beneficiaries in Yazd. Figure 5 and 6 represent the existing structural holes and cut points. Eliminating these cut points, shown in blue, many clusters are divided into two or more small clusters. The number of these people in different groups are less in participation network than in trust network of Yazdi ranchers. For example, as indicated in Fig. 6, some groups lacks such elements and in some groups one or a maximum of 3 individuals makes expansive communications between several small groups. Due to the presence pf small number of these important mediators in the network of livestock beneficiaries, maintaining and developing communication between various groups has been problematic and complicated. On the other hand, lack of individuals as mediators between two or more close groups makes it difficult to transfer different information (social, environmental, economic) between different groups. An important advantage of these people, as Burt (1999) referred to is their emphasis on discovering and developing great opportunities. So, individuals who can mediate between groups are so valuable. For example, in the community under study here, many conflicts over

using water take place due to the misunderstanding and misinterpretation made by fellows in other groups and the presence of these key mediators with mentioned specifications, significantly prevent the occurrence of these events.

CONCLUSION

The present research has studied and analyzed the status of social capital in the network of livestock beneficiaries based on the network analysis method. Therefore, it has analyzed participation and trust which are important components of social capital. Analyzing relations based on indices of density, reciprocity and network size and visual analyzing based on the concepts of cut points and structural holes helped to assess social structure of local livestock beneficiaries in Yazd Province using mathematical elements and to assess their social organization in participatory management.

The results obtained in this study indicate that unfortunately none of the indices has optimal status. Evaluation shows that the density index in both network of participation and trust was weak, indicating poor social cohesion and reduced resilience of livestock beneficiaries when facing with environmental stresses. Lack of communication links between beneficiary individuals and groups makes the size index be much lower than expected. Reciprocity index, representing mutual cooperation, is also weak in the participation network which demonstrates low stability of this network in the livestock beneficiaries' community in Yazd. These conditions are slightly better, in the trust network but not at an optimal level. Analysis of motioned indices shows that the relations structure of this community suffers from a social disorder. As Lawson *et al*. (2001) state, poor trust and participation as supporter mechanisms creating a sense of security in emergencies (such as situation that livestock beneficiaries in Yazd are now facing with) have failed to facilitate social actions and solve the problem requiring collective actions. Coleman (1988) and Brehm and Rahn (1997) referred to these items as tasks of trust and participation. Weakness in these two important components of social capital reduces social cohesion of the community and the desire to participate in collective cooperation. It can be understood form the network of yazdi livestock beneficiaries that social participation of individuals and accessing information is more homogenous inside local groups than in between-group relationships. There is lack of those individuals who are mediators between groups. The prominent characteristic of these people is their ability to access information and have necessary experience for transferring it, the case that is the need of the participatory management of the area under study.

Absence of these mediators or presence of weak links between groups has made various structural holes in the networks of trust and participation. According to the results obtained from the analysis, trust network, having more links and density ratio higher than participation network, has a relatively better social cohesion; however, this structural weakness is obvious in both networks especially in participation network. The present study is compatible with the study of Burt (1992, 2000, 2002) in which he referred to these individuals, with mentioned specifications, as social capitals of network since absence of these people prevents creating an integrated and cohesion network. In the livestock beneficiarie's network in Yazd, lack of these individual, with mentioned specifications, has declined communicational social capital with such efficiency. Lack of these mediators has reduced density at the whole network, resulting in, as stated by various researchers including Leahy and Anderson, reduced strength of trust and participation and decelerate developing participatory management.

It can be clearly understood that livestock beneficiaries in Yazd focus on the activities inside their own groups that is often based on family ties and lack of possible links has made holes in the flow of information and between-group cooperation at the macro level of network of Yazdi livestock beneficiaries, in simpler terms, structural holes have been made. The reason of lacking mediators and communicational bridges can be traced in high centralization of network. Studying centralization index indicates that spreading participation and trust, between livestock beneficiaries, is weaker than receiving participation and trust and this is the result of high centralization in external links than in internal links. Lack of centralization in external links in certain clusters has caused non-appropriate distribution of cooperation links at the whole network and in general, it can be a barrier to establish ideal participatory management. High centralization of central actors in internal links rather than in external links is a factor preventing the formation of intermediate relationships at the macro level of yazdi rancher's network. The results of the present study are in line with those of the study by Prell *et al*. (2009) (Scholz, 2011) in which they confirmed the role of central actors and their influence in communicational mediating and establishing successful participatory management. This study is compatible with the study by Watts (1999) in which he approved that through small number of mediators but with special features, communicational bridges can be built in the social world. These small

numbers of links, despite large geographical distances, can produce bigger clusters. Absence of these people with appropriate distribution, who are able to get different ideas from different sources and share innovative ideas with others, has reduced creativity and innovation necessary in dealing with environmental problems especially drought. As time passes and water shortage shows its effects in social lives of livestock beneficiaries including livelihood, social cohesion and resilience necessary in dealing with environmental stresses are reduced. It can be concluded that the network of livestock beneficiaries in Yazd was weak. According to sociologists such as Coleman (1990) and Putnam (1995) who define social capital with regard to its function, it can be stated that due to the weakness in the formation of an appropriate social capital, there will be no facilitations for collective actions and solving problems that require participation. Social network analysis based on indices and concepts helped in analysis the networks of trust and participation at the macro level resulting in solid understanding of the social structure of livestock beneficiarie's community in Yazd Province. What can be referred to at the end of this discussion is the necessity of creating and strengthening ideal social spaces based on social trade-offs, the case which is needed in the community of livestock beneficiaries in Yazd Province. It is hoped that realizing collective actions at an appropriate level help the realization of successful participatory management based on local communities.

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