African Journal of Agricultural Research Vol. 6(1), pp. 84-88, 4 January, 2011
Available online at http://www.academicjournals.org/AJAR
ISSN 1991-637X ©2011 Academic Journals

Full Length Research Paper

A community-based management model for the implementation sustainable development in rural areas of Iran

Loghman Rashidpour[1]*, Seyed Jamal Farajallah Hosseini[1], Mohammad Chizari[2] and Seyed Mahdi Mirdamadi[1]

[1]Department of Agricultural Management, Islamic Azad University, Mahabad Branch, Mahabad, Iran.
[2]Department of Agricultural development, Islamic Azad University, Science and Research Branch, Tehran, Iran.
[3]Department of Agricultural Extension and Education, Tarbiat Modares University, Tehran, Iran.

Accepted 30 July, 2010

Community-based management is basically the involvement of the beneficiary communities in the management of sustainable rural development facilities. Community based management will become the pivotal instruments responsible for managing community development, which include the assessment of community/demands as well as the potential planning and implementing development programs. In this study, survey and descriptive-correlation research methods, were used to design the pattern of community-based management and its application for sustainable rural development process in Iran rural areas. Study population consisted of 270, local community (rural councils), offices experts in rural related office activities and, Agricultural and Natural Resources Engineering Organization - NGO members. Conclusions of structural equation modeling of the accepted characteristics indicated that latent variable such as "Stakeholder's Role" and "Affecting Factors" have positive effect and "Obstacles" latent variable has a negative role to design CBM. A structural equation indicate that these variables altogether account for 93% of variance (R2 = 0.93) in designing community-based management. Overall community-based management will have more impotent role in rural developments process planning, organizing, staffing, controlling and directing.

Key words: Community-based management, sustainable rural development, stakeholders, affecting factors, obstacles, structural equation modeling.

INTRODUCTION

Until recently, management was often the exclusive task of technical experts working under the auspices of the state. At the moment, however, participatory management and stakeholder involvement are becoming increasingly important. Moreover, awareness of uncertainty and change is increasing. New management practices that involve many stakeholders must be adopted (Pahl-Wostl, 2007).

Collaborative or cooperative management has been defined in many ways, but it is generally thought of as a power-sharing arrangement between the government and local stakeholder groups. Singleton (1998: 7) defines co-management as 'the term given to governance systems that combine state control with local, decentralized decision making and accountability and which, ideally, combine the strengths and mitigate the weaknesses of each.

In order to investigate the relationship between the state and the community and to unpack the concept of co-management, Clarsson and Berkes (2005: 68) illustrates five different alternatives as co-management, the first version:"co-management as an exchange system"; the second image of "co-management as joint organization"; The third image, "co-management as a State-nested system"; the other form of nested systems,

*Corresponding author. E-mail: rashidpour@gmail.com. Tel: +989125696099.

"co-management as a community-nested system"; and the fifth image of co-management, here called "co-management as network". Because the players are diverse and the relations among them are multiplex, Carlsson and Berkes suggested that conceptualizing co-management systems as networks best reflects the complex realities of these systems of governance.

Closely related to "co-management as network" is the concept of community-based management (Welch-Devine, 2008: 150). Community-based approaches can form part of the co-management process, and when community-based management is a large component of a co-management process, the result can be thought of as "community-centered co-management" (Pomeroy, 2001). Such an approach would be toward the maximum end of Tyler (2006) community power continuum that is called community control.

This research relies on a broad definition of community-based management as incorporating both a top-down and bottom-up approach. This collaborative process is based on the participation of all individuals and groups that have a stake in the management framework. Social, cultural, and economic objectives are an integral part of the management framework. Government retains responsibility for overall policy and coordination, while the local community plays a large role in management.

Also, community-based management creates the opportunity to take advantage of scientific, technical knowledge and related NGOs and local or traditional knowledge (Rashidpour and Hosseini, 2007). This definition leaves sufficient flexibility for the definition of the system but highlights interest in the interactions between state and non-state actors, emphasizes multi-sectoral collaboration in order to minimize fragmentation of efforts, waste of resources and competition for participatory actions. This is specifically an attempt to find new solutions for the failure of top-down approaches to resource conservation and sustainability. CBM has been seen as a conservation, empowering, poverty reducing and/or general rural development strategy (RLEP, 2004). Such community-based approaches create opportunities to strengthen social capital and community relations, and to develop effective institutions for the management of sustainable rural development (RLEP, 2004). Sometimes, it has also been applied to designate approaches where local communities play a central but not exclusive role in natural resource management (Rothay et al. 2005).

Danida (2007: 17) and Sarrafi (2003), called this approach "Good governance" system as a development strategy at local level. Therefore, the establishment and maintenance of good governance or "appropriate decision-making arrangements" is the only feasible way to prevent the failure (or ensure the success) of rural sustainable development.

Despite gains realized, community-based natural resource management as a construct is not easy and takes time and resources. Reluctance to change is perhaps one of the greatest challenges to CBM (Meshack et al., 1998: 8).In other writings, Danida has explained one of the tricky issues in approaching the national level which is that, for a number of reasons, central governments and line ministries may be hesitant to delegate power to local organizations. National-level decision-makers might fear losing revenues and, hence, personal and institutional benefits, but resistance may also reflect genuine concerns over lack of capacity and staff to implement institutional changes (Danida, 2007: 5). Thi and Van Luong (2008: 329) pointed out that, a major challenge include complexity of the method, high costs (time and resources) and lack of skilled community facilitators.

The main goal was to design the pattern of local community-based management for sustainable rural development in Iran the West Azarbaijan province. The objectives of this study are as follows: (1) What stakeholders can be formed the structure and framework of a community-based management. And what is their role and responsibilities? (2) What are efficient factors for designing the pattern of community-based management? (3) What obstacles are encountered in the design of a pattern of community-based management? and (4) What community-based management will do for sustainable rural development in west Azarbaijan province in Iran?

MATERIALS AND METHODS

The methodology used in this study involved a combination of descriptive and quantitative research and included the use of correlation, regression and descriptive analysis as data processing methods. A Delphi survey methodology was used to develop the theoretical framework of the study. The statistical population consisted of local community (rural council members), senior experts in related fields from departments of agriculture and natural resources, environment and state officials and members of Agricultural and Natural Resources Engineering Organization who were involved in activities related to community-based management. Sample size included 120 rural council members, 60 senior experts from Ministry of Agriculture and 90 Agriculture and Natural Resources Engineering Organization members. In this study, attitudes towards community-based management approach were measured by set of questions about: "role of community in community-based management", "role of public sector in management based on community", role of non-governmental sector in the community-based management", affective and appropriate factors", obstacles on the formation of community-based management approach", and, "role of community-based management in sustainable rural development process". The content validity of questionnaire was measured by a group of extension, rural and agricultural development specialists. A pilot test was conducted to determine the questionnaire's reliability and the Cronbach's alpha was 0.78. Data collected was analyzed using the Statistical Package for the Social Sciences (SPSS) and Linear Structural Relationships (LESREL).

RESULTS

The results of this study showed that 44.5% of respondents were member of local communities, 22.2%

Table 1. Estimation of regression weight, t- value and R^2 of X-model variables.

Observed X	SC[1]	T	R^2
Community role	0.85	R.V.[2]	0.72
Government role	0.69	12.53	0.47
Non- government role	0.69	12.46	0.46
Management factors	0.76	R.V.	0.57
Social factors	0.88	15.56	0.78
Political factors	0.74	12.71	0.55
Economic factors	0.70	11.81	0.48
Educational factors	0.90	16.03	0.81
External limitations	0.86	R.V.	0.73
Internal limitations	0.72	14.30	0.51

[1]Completely standardized solution; [2]Reference variable.

were employed in public sector, and 33.3% were NGOs members. The average age of local community members were 41 years with average of 6 years of membership in rural council. The average age of public sector employees was 36 years old, with average of more than 10 years of experiences. The average age of non governmental organization members was 33 years old with average experience of 6.5 years.

The respondents from local communities, public sectors and NGOs were asked to indicate their perception about factors and challenges that affect the community-based management.

The structural equation model (SEM) was used to examine a series of relationships among variables simultaneously without being influenced by measure-ment. Based on the correlation coefficients, three structural models were established:

(1) X-model indicated that "Community Role" had the highest impact factor loadings of 0.85. It appears to be the best indicators of "Stakeholders". The latent variable "Stakeholders" explains about 72% of variance in "Community Role" (Table 1). "Educational Factor" has largest factor loading of 0.90; it appears to be the best indicators of "Factors" and it explains about 81% of variance in affecting factors.

"External Obstacle" has a large factor loading of 0.86; it appears to be the best indicators of limitation. This variable explains about 73% of variance of "External Obstacle". The inter correlations have already been described in Table 1 and Figure 1 for the measured variables.

(2) Y Model indicated that "Organizing" and "Controlling" have largest factor loadings of 0.79; It appear to be the best indicators of CBM. The inter correlations which have already been described in Table 2 and Figure 2, showing that the other indicators had a large factor loading and were important. Completely standardized solutions of the structural model (Figure 3) showed that observed latent variables in this study; "Factors", "Beneficiaries" and "Obstacles" have factor loadings of 0.66, 0.50 and -0.17, respectively. It appears that the latent observed variables "Factors" and "Beneficiary Role" has positive effect and Limitation and has a negative effect on community-based management (CBM) Table 3. These latent observed variables explain about 93% of variance in community based management.

Eventually, based on the above results, CBM was affected by stakeholders, factors and obstacles (model 4). This model shows the estimation of regression weight, such as that explained above on X, Y and structural models. The results of the complete structural equation model (SEM) for observed and latent variables are provided in Figure 4. The results of fit indices used to evaluate the adequacy of this model showed that X^2 = 124.93 and that significant level was 0.002, which means that Chi-Square statistic rejects this model (Kalantari, 2009). Chi-Square value is the traditional measure for evaluating overall model fit, though there are also a number of severe limitations in its use. Firstly, this test assumes multivariate normality and severe deviations from normality that may result in model rejections even when the model is properly specified (McIntosh, 2006). Secondly, because the Chi-Square statistic is in essence a statistical significance test. It is sensitive to sample size which means the Chi-Square statistic nearly always rejects the model when large samples are used (Bentler and Bonnet, 1980). Due to the restrictiveness of Chi-Square, researchers have sought alternative indices to assess model fit (Hooper et al, 2008: 53). Therefore, measures of fit were examined including the Goodness of Fit Index (GFI = 0.94), the Comparative Fit Index (CFI= 1.00) and Root Mean Square Error of Approximation (RMSEA = 0.046). This model appeared to fit well enough, with the GFI and CFI both greater than 0.90 and RMSEA less than 0.05. Based on the above fit indices, it can be concluded that the final model fits the proposed model.

DISCUSSION AND CONCLUSION

Based on the X-model, we can conclude that: (1) "Community Role" is superior to the two other sectors considered (GO Role and NGO Role) in predicting the "Stakeholders" role in CBM. In effect, this scale is best adjusted to the data, and has the strongest predictive power; (2) "Educational Factor" is superior to the four other factors considered (management, social, political and economic factors) in predicting the affecting factors in CBM, and has the strongest predictive power; (3) "External Obstacle" is superior to the other obstacles considered (internal obstacle) in predicting the restriction in CBM and has the stronger predictive power.

Based on the Y-model, "Community-Based Management" explains that about 61, 62, 58, 63 and 44%

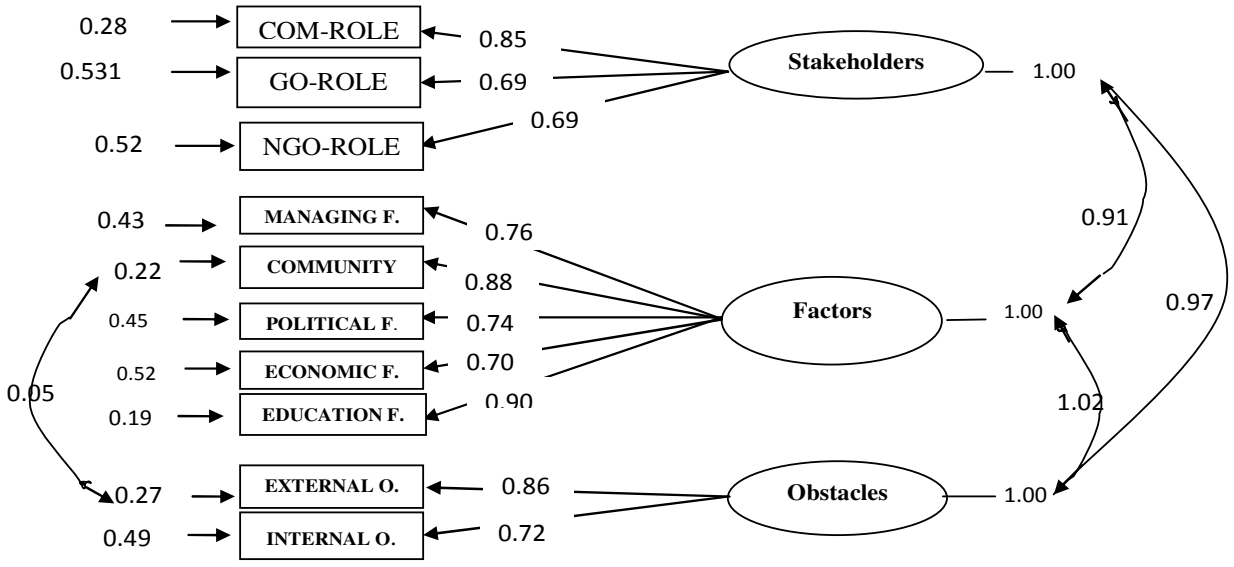

Figure 1. Estimation Relation among variables of measurement model (X- Model); The numbers on arrows from the latent variable to observed variables are completely standardized solutions (regression weights).

Table 2. Estimation of regression weight, t- value and R^2 of Y-model variables.

Observed–Y	Label	SC	T	R^2
Planning	Planning	0.78	R.V.	0.61
Organizing	Organizing	0.79	14	0.62
Staffing	Staffing	0.76	13.51	0.58
Controlling	Control	0.79	14.17	0.63
Directing	Directing	0.67	11.46	0.44

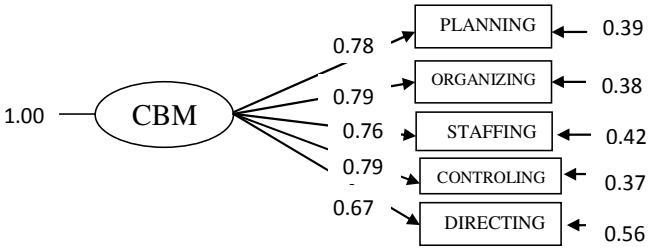

Figure 2. Estimation relation among variables of measurement model (Y- Model).

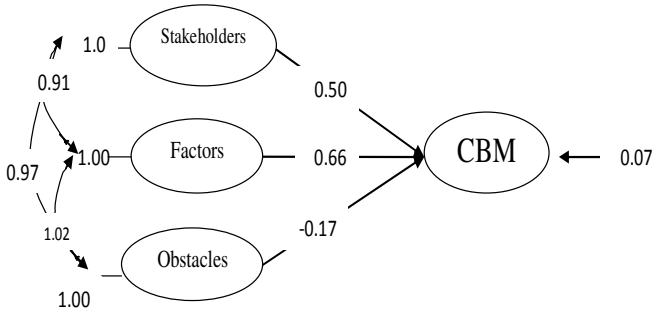

Figure 3. Relations among latent variables of structural model.

Table 3. Regression relationship of latent variables.

Latent Y \ Latent X	Beneficiaries role	Affecting factors	Obstacles
	0.50	0.66	-0.17

of variance in “planning”, “Organizing”, “Staffing”, “Controlling” and “Directing” affects rural sustainable development process.

On the basis of structural model, we can conclude that factors, stakeholders and obstacles have important effect on community-based management.

Moreover, the structural equation modeling had an acceptable goodness of fit with the proposed model. This result confirms the previous research (Clarsson and Berkes, 2005; Plummer and Armitage, 2007; Borrini-Feyerabend et al., 2000; Faryadi, 2005; Meshack et al., 1998; Pomeroy et al., 2007; Olyel, 2006; Welch-Devine, 2008). Overall, this research provides an initial exploration of new management practices such as community-based management approach that involves many stakeholders and should be adopted for success and sustainability in rural strategy development. This approach has three

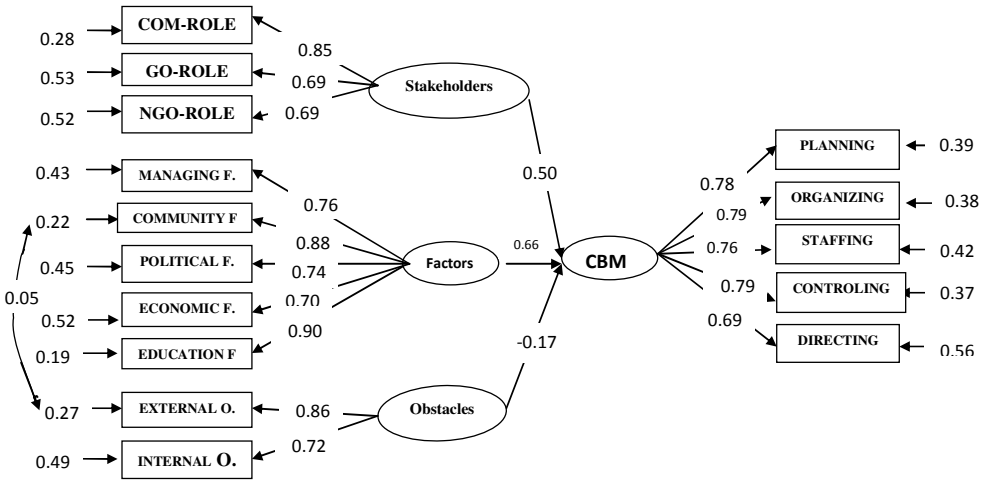

Figure 4. Estimation of regression weight (standardized factor loadings) of variables interrelations.

indicators: Stakeholders, factors and obstacles. The most representative indicator for stakeholders' role in community-based management is local community role. So, it is important to consider rural people and community in rural development managing process. Also, the most representative indicator for effective factors is educational and social factors, confirming the importance of local community role in this approach. The community-based management for sustainable rural development can perform significantly the planning, organizing, staffing, controlling, and directing of rural sustainable development process. On the basis of the results of the research, it is recommended that strategy of rural sustainable development should consider local community such as main partnership and stakeholder.

REFERENCES

Bentler PM, Bonnet DC (1980). Significance tests and goodness of fit in the analysis of covariance structures. Psychological Bull., 88(3): 588-606.

Borrini-Feyerabend G, Farvar MT, Nguinguiri JC, Ndangang VA (2001). Co-management of natural resources: Organizing, Negotiating and Learning-by-Doing. GTZ and IUCN, Kasparek Verlag, Heidelberg (Germany).

Carlsson L, Berkes F (2005). Co-management: concepts and methodological implications. J. Environ. Manage., 75: 65-76.

Danida (2007). Community-based natural resource management, Techical Advisory services, Ministry of Foreign Affairs of Denmark.

Devine J (2006). Community based organizations new fad or old hat? Commun. Dev. J. Oxford Univ. Press doi:10.1093/cdj/bsl032. permissions@oxfordjournals.org

Faryadi SH (2005). A Methodology for Participatory local Environmental planning, J. Environ. Stud., Tehran university press, 31(37): 14-29.

Hooper D, Coughlan J, Mullen MR (2008). Structural equation modeling: Guidelines for determining model fit." The Electronic Journal of Business Research Methods, 2008, 6(1): 53-60, available online at: www.ejbrm.com.

Kalantari KH (2009). Structural equitation modeling in socio- economic research" Farhange Saba Press, Tehran, Iran. (In Persian).

Meshack M, Jeff O, Thomas O (1998). Challenges and opportunities in community-based dry land natural recourses management, A community member expressing her view on management of the community based organization. Regional Programme on Sustainable Use of Dry land Biodiversity (RPSUD) National Museums of Kenya.

Olyel D (2006). Right tool, Wrong target? Co-management in the Ugandan fishery sector. A thesis submitted in partial fulfillment of the Masters Degree in International Fisheries Management, Norwegian College of Fisheries Science University of Tromson, p. 124.

Pahl-Wostl C, Marc C, Art D, Erik M, David T, Tharsi T (2007). Social learning and water resources management. Ecol. Soc., 12(2): 5. [online] http:// www.ecologyandsociety.org/ vol12/iss2/art5.

Plummer R, Armitage DR (2007). Charting the new territory of adaptive co-management: a Delphi study. Ecol. Soc., 12(2): 10. [online] URL: http://www.ecologyandsociety.org/vol12/iss2/art10/.

Pomeroy RS, Rivera-Guieb R (2006). Fishery co-managemnt: A practical hand book, CABI publishing, Cambridge, MA02139, USA, pp. 8-23.

Rasshidpour L, Hosseini SJF (2007). Community-based management approach in natural recourse protection. J. Agric. Ext. Rural Dev. Tehran, Iran (in Persian), pp. 187-204.

RLEP(rural livelihood evaluation partnership (2004). Community based (Natural Resources) Management , UK Department for International Development for the benefit of 'developing Thematic Lessons Paper Series- 3, Dhaka , Bangladesh.

Sarrafi M (2003). Good governance: Instrument field of rural community development in Iran, Studies based on Hamadan province. Rural Development Congress Abstracts, Institute of Rural Development (In Persian), pp. 102-100.

Singleton S (1998). Constructing cooperation: the evolution of institutions of co-management. University of Michigan Press.

Thi Kim NY, Van Luong P (2008). Participatory village and commune development planning (VDP/CDP) and its contribution to local community development in Vietnam, Oxford Univ. Press Commun. Dev. J., doi:10.1093/cdj/bsn018, email: journals. permissions@ oxfordjournals.org.

Tyler SR (2006), Communities, Livelihoods and natural resources: Action research and policy change in Asia, International Development Research Centre (Canada) Published by IDRC, p. 420.

Welch-Devine M (2008). From common property to co-management: implementing natural 2000 IN SOULE. A thesis submitted in partial fulfillment of the Degree Doctor of Philosophy, University of Georgia. ATHENS, pp. 145-154.