RESEARCH NOTE

Scale To Measure the Livelihood Status of Village Forest Committee (VFC) Members

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ABSTRACT

Village Forest Committee (VFC) members engage in diverse andmultiple activities to improve their livelihoods by maximizing their income through income generatingactivities, while minimizing vulnerability and risk and achieving other householdobjectives (improved health, nutrition and education etc.). These activities mayinclude forestry based farm, non-farm and other non-forestry activities.An attempt was made in the study to construct a scale to measure livelihood status of VFC members due to joint forest planning and management (JFPM) programme. The method of rating was followed in the construction of livelihood status scale. The scale was found to be reliable and valid. The livelihood scale developed was administered to 30 VFC members of Gollahatty village, Sirataluk of Tumkur district in Karnataka state during 2015. The results revealed that 77.00 per cent of VFC members had medium to high level of livelihood status and 23.00 per cent of VFC members had low levels of livelihood status respectively.

Key words: *Assets; Activities and capabilities; Livelihood status;*

Join Forest Planning and Management (JFPM) programme is one of the forest conservation and income generating programme with the involvement and co-operation of local people living in and around the forest area. JFPM basically includes sharing of products, responsibilities, control and decision making authority over the forest landbetween forest departments and local usergroups. The JFPM facilitatesthe planning, protection, conservation and development of forest and natural resources which finally helps in mitigationof forest degradation and illeffects of climatechange. Through this programme, tree coverage has been increasedwhen compare to earlier situation.This process eventuallyhelpstomitigate theclimatechange. The Karnataka Forest Department has constituted 3887 VFCs in the Karnataka state bringing nearly 3, 40,000 ha of degraded forests under JFPM. The people are living in and around the forest area normally, have tribal trails and their knowledge and skill will be very poor. These people, who are supposed to develop, conserveand protect the forest resources are started destroying the forest resources. In order to arrestthe destructions of the forest by these people, Government of India introduced a programme called joint forest management (JFM) programme. JFM order was issued during 1990 after the forest policy act was conducted during 1988 which set the stage for participatory forest management in India. The government of Karnataka promulgated a government order on joint forest planning and management (JFPM) programme in 1993. This was further reinforced with Japan international cooperation agency (JICA) funded project namely Karnataka Sustainable Forest management and Bio-diversity Conservation (KSFMBC) Project.This project was initiated during the year 2005-06. JFPM schemes are known to provide many ecological, socio-cultural, and economic benefits to rural society.

Livelihood is the means in which people use to support themselves, to survive and to prosper. It is an outcome of how and why people organize to transform the environment to meet their needs through technology, labour, power, knowledge and social relations. Livelihoods are also shaped by the broader economic and political systems within which they operate. A

livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. (*Chambers and Conway, 1991*). With this background the present study has been under taken to develop and standardize a scale to measure the livelihood status.Hardly any studies were conducted to know whether livelihood status of people has improved or not due to KSFMBC project. Hence, the research was taken with an objective of

i.   To develop and standardized a scale to measure livelihood status of VFC members.

ii.   To understand the overall livelihood status of village forest committee (VFC) members.

Development of a scale to measure livelihood status of VFC members: Livelihood Statusis operationally defined as the status of farmers with reference to assets, activities, capabilities and coping stratifies to overcome from crisis which in turn ensures their livelihood/ livelihood security (*Satyapriya et al., 2015*). The method of summated rating suggested by *Likert (1932)* and *Edwards (1969)* were followed in the construction of perception scale.

Collection and Editing of items: A list of 105 items/ statements reflecting the livelihood status was prepared through extensive review of literature and discussion with scientists. The items/statements so identified were carefully edited in the light of 14 criteria suggested by *Edwards (1969)* and *Thurstone and Chavue (1929).* Ninety two statements were retained after considering the 14 criteria.

*Relevancy Test:*Ninety two items/statements were sent to 750 judges in State Agricultural Universities, Central Agricultural Universities and Indian Council of Agricultural Research institutions as well as to some University and research institution experts in Afghanistan with necessary instructions to critically evaluate each item/statement as to its relevancy to measure the livelihood status of VFC members and give their response on four point continuum viz., Most relevant (MR), Relevant (R), Somewhat Relevant (SWR) and Not Relevant (NR) with the score of 4,3,2 and 1, respectively. In all 80 judges could respond in time. The relevancy score for each item/statement was found out

by adding the scores on the rating scale for all the 80 judges. From the data so gathered "Relevancy Percentage", "Relevancy Weightage" and "Mean Relevancy Score" were worked out for all the 92 items/ statements by using the following formulae:

$$RP = \frac{(MR \times 4) + (R \times 3) + (SWR \times 2) + (NR \times 1)}{\text{Maximum Possible Score}}$$

$$RW = \frac{(MR \times 4) + (R \times 3) + (SWR \times 2) + (NR \times 1)}{\text{Maximum Possible Score}}$$

$$MRS = \frac{(MR \times 4) + (R \times 3) + (SWR \times 2) + (NR \times 1)}{\text{Number of Judges responded}}$$

Where

RP   =   Relevance percentage
RW   =   Relevance weightage
MRS   =   Mean relevancy score
MR   =   most relevant
R   =   relevant
SWR   =   somewhat relevant
NR   =   not relevant

Using these three criteria, individual statements were screened for these relevancies. Accordingly, the items/statements having relevancy percentage of more than 85 per cent, relevancy weightage of more than 0.85 and Mean Relevancy score of more than 3.0 were considered for the final selection. By this process, 45statements were isolated in the first stage which were suitably modified and written as per the comments of judges wherever applicable.

Item Analysis: To delineate the items/statements based on the extent to which they differentiate the livelihood status items/statements as favorable or unfavorable, item analysis was carried out on the items/statements selected in the first stage. For item analysis, the respondents were arranged in ascending order based on livelihood status scores. Twenty five per cent of the subjects with the highest total score and 25 per cent with the lowest total scores were selected. These two groups provided the criterion groups in terms of which item analysis was conducted and critical ratio was calculated by using the following formula:

$$t = \frac{\overline{X}_H - \overline{X}_L}{\sqrt{\frac{\left(\sum X_H{}^2 - \frac{(\sum X_H)^2}{n}\right) \times \left(\sum X_L{}^2 - \frac{(\sum X_L)^2}{n}\right)}{n(n-1)}}}$$

Where,

$\overline{X}_H$= Individual scores in the high group

$_L$ = Individual scores in the low group

n = Number of respondents

Based on the item analysis ('t' value), Forty five items/statements were found non-significant, while 6 items/statements were significant at five per cent and 4 items/statements were significant at one per cent level, were finally retained in the scale to measure the livelihood status. Forty five items/statements which were statistically non- significant means there is no any variation among the judgments and finally they were retained in the scale to measure livelihood status of VFC members. Forty five items/statements selected in the final livelihood status scale include four dimensions: Assets [Natural Assets (eight statements), Social Assets (eight statements), Human Assets (five statements), Physical Assets (three statements) and Financial Assets (five statements)], Activities (six statements), Capabilities (six statements) and Coping strategies to overcome crisis (four statements).

Reliability: Reliability refers to the precision or accuracy of the measurement or score. A well-made scientific instrument should yield accurate results both at present as well as over time (*Ray and Mondal, 2011* and *Satyapriya et al., 2015*). The split-half method was employed to test the reliability of the perception scale. The value of correlation co-efficient was 0.6966 and this was further corrected by using Spearman Brown formula and obtained the reliability co-efficient of whole set. The 'r' value of the scale was 0.8212 which was higher than the standard of 0.70 indicating the high reliability of the scale. It was concluded that the perception scale constructed was reliable.

Validity: Validity of the test is the accuracy with which it measures that which is intended to measure. Construct validity was employed to measure the validity of the scale. The Validity co-efficient for the scale was 0.9063, which was also greater than the standard requirement of 0.70 indicating the higher validity of the developed scale. Hence, the scale is valid. Thus, the developed scale to measure livelihood status of VFC members was feasible and appropriate.

Administration of Livelihood Status Scale and Method of Scoring : The livelihood status scale developed was administered to 30 VFC members along a four point continuum representing 'Highly satisfied', 'Satisfied', 'Less satisfied' and 'Not satisfied' with

weightage of 4,3,2 and1, respectively and vice versa for negative statements . The livelihood status score of a respondent was calculated by adding up the scores obtained by him/her on all items/statements. The livelihood status score of this scale ranges from a minimum of 45 to a maximum of 180. Higher score on this scale indicates that the respondent has higher level of livelihood status in *Gollahatty* villages of *Sirataluk* of *Tumkur* district in Karnataka state during 2014-15. Based on the mean (163.00) and half standard deviation (3.27) the VFC members were categorized into three livelihood status category viz., poor, better and good.

Table I. Scale to measure Livelihood Status of VFC members

Statements	HS	S	LS	NS
I. Assets				
Natural assets status				
The land owned provides greatest prestige in the society				
Livestock owning ensures economic security				
Assured irrigation means guaranteed livelihood				
Joint Forest Planning and Management (JFPM) facilitates more vegetation for Village Forest Committee (VFC) members				
Forest products and Non Timber Forest Products (NTFPs) are important assets for livelihood				
Living situation is well balanced with ideal climatic condition				
Trees raised in barren land provide additional income				
A number of forest produce improve livelihood status				
Social assets status				
VFC's family members are educated about the forest conservation practices and development				
VFC members support the JFPM programme during the crises				
JFPM enables the VFC members to participate in outreach activities				
VFC facilitates active participation of members in JFPM programme				
JFPM develops the willingness among VFC members to pay and use the forest resources				

JFPM enables VFC members to consider their need and interest on forest conservation and development

JFPM enables the VFC members to participate in the planning for forestry resources development

JFPM enables members to implement the activities of micro plan of its members

Human assets status

JFPM facilitates human empowerment

VFC members are knowledgeable on JFPM components through intensive extension programmes

JFPM provides opportunity to get educatedin protecting and developing the forest resources

JFPM provides linkage between the SHGs and VFC members

JFPM facilitated leadership development

Physical assets status

JFPM provides forest management practices for VFC members

Employment opportunity for VFC family members enhances social status

Forest wealth serves as a means of secured livelihood status

Financial assets

Improved savings provide security for VFC members to spend for other activities

JFPM provides income from forest and other allied activities for VFC members

JFPM enables the members to get the due share from the plantations raised jointly by forest dept. and VFC members

Animal husbandry provides supplementary income for VFC members in JFPM area

Apiculture practice is a source of income for VFC members

II. Capabilities

VFC enable its members to access to common property resources

JFPM will make the VFC members to excise foresight at the time of emergency

VFC members are capable to implement micro and macro plan in JFPM area

JFPM facilitates the participatory skills among the VFC members

JFPM encourages VFC members to link with different development departments

VFC facilitates to adopt innovative forest technologies in JFPM area

Activities

VFC members participate in preparing of Joint Management Plan(JMP)

VFC members participate actively in choice of tree's species for plantation in JFPM area

JFPM provides integrated forest management system for VFC members

JFPM facilitates VFC members in enriching the forest area

JFPM provides environment for VFC members to perform duties

JFPM facilitates co-operation in protection of planted area among the VFC members

Coping strategies mechanism stress

Working under Forest Department as labour helps in earning income

Income Generating Activities (IGA) initiated due to JFPM will help to mitigate the crisis situation

Subsidiary enterprises help members to keep them fully engaged and also provides additional income for VFC members

VFC members use biomass during the crises situation

HS = Highly Satisfied,   S = Satisfied,   LS = Less satisfied,   NS = Not satisfied

Overall livelihood status of VFC members : It is found from Table II that 77.00 per cent of VFC members were belongedbetter to good livelihood status categories and23.00per cent of VFC members were belonged topoorlivelihood status categories respectively. This improvement was observed due to promotion of income generating activates (IGA) among the VFC members. The project had a component of promoting income generating activities among the VFC members and this was implemented by farming self-help group among the VFC members, the VFC members were encouraged to take the income generating activities by availing the revolving fund given to self-help group as part of the project. However, this was done to discourage the VFC members not to degrade the forest resources.

Table 2. Overall livelihood status of the VFC members (n=30)

Categories	No.	%
Poor (<160 score)	7	23.33
Better (160-166 score)	13	43.34
Good (>166 score)	10	33.33
Total	30	100.00

Mean = 163.00, Standard Deviation = 6.54

CONCLUSION

The Livelihood status scale developed is found to be reliable and valid; hence it can be used to measure the livelihood status of VFC members. The developed scale can be used by other researchers to measure livelihood status of people. The livelihood status scale developed, so was administered to 30 VFC members of Tumkur district. It was found that majority (77.00%) of VFC members had medium to high level of livelihood status.

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