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Stakeholders' Participation in Innovation Platform of Humidtropics in West Africa: Implications on Livelihood Outcomes

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Abstract

Key to improving livelihood outcomes is innovations that target at boosting productivity and income of concerned households. This attempt informed a CGIAR research programme on the integrated systems in the humid tropics regions named Humidtropics that focused the use of innovation platforms to improve livelihoods of smallholder farmers. We assessed livelihood outcomes of stakeholder participants and non-participants in the innovation platforms established by Humidtropics in Nigeria. A multistage random sampling technique was used to select 200 stakeholders comprising 93 participants and 107 non-participants. Data were collected using structured questionnaire on socio-economic characteristics and five livelihood asset capitals (Social, Natural, Financial, Human and Physical) of the stakeholders. The data collected were analyzed using descriptive statistics and sustainable livelihood model. The results showed that the livelihood asset of the participants (0.72) was found to be significantly higher ($\chi 2= 3.732$, $p < 0.10$) than that of the non-participants (0.45). The results further revealed remarkable increase from 0 to 0.77 and 0.33 to 0.82 for human capital and social capital respectively, as stakeholders participate in innovation platforms for research and development. The policy message from this revelation is that further investment should be made in the establishment and strengthening of innovation platforms that enable the development, effective dissemination and adoption of agricultural innovations, thus fostering improved livelihood, alleviate poverty and reduce food insecurity.

Keywords: Innovation platforms, Livelihood Outcomes, Participation, Humidtropics, West Africa.

Background

Humidtropics is an innovative research for development programme of the Consurtium Group on International Agricultural Research (CGIAR) led by International Institute of Tropical Agriculture (IITA) for the humid tropics and sub-tropical regions. The programme is designed to work in divers selected agro-ecologies, market conditions, and farming systems to develop innovations, increased productivity, improved market performance, and sustainable management of the natural resource-base in the region. However, the system which makes up aggregation of the different agricultural component to achieve a common objective that is of benefits to all may exploits some components excessively leaving others un-utilized or underutilize. The system comprises of crop production, livestock production, marketing, engineering, processing, storage, etc. These components need to come together to achieve a common goal of increasing productivity to eradicate poverty and maintain sustainable environmental conditions (FAO, 2001). Hence, the main objective of this study is to assess changes that occurred in stakeholders' livelihoods as a result of their participation in innovation platforms established by Humidtropics in Nigeria action site.

Methodology

The study was carried out in Southwest, Nigeria. A multistage sampling technique was used to select the respondents. Data from 200 responses comprising 93 participants and 107 non-participants to the innovation platforms were found to be adequate for analysis. Primary data (both quantitative and qualitative) were analysed for this study. Quantitative data were collected through structured and pretested questionnaire while the qualitative data were collected through focus group discussion. Descriptive statistics and sustainable livelihood model were used in this study to analyse the data collected. The sustainable livelihood model was used to analyze the livelihood outcomes of farmers at the cocoa based farming system in Humudtropics sites in Southwestern Nigeria.

Results and Discussion

The distribution of respondents according to their socio – economic characteristics which includes sex, age, household size, farming experience, level of education of both participants and non-participants of the innovation platforms in Humidtropics sites were shown in Table 1 with means, percentages and the t-values of the distribution. The result showed that 74% of the all the respondents were male. The mean age of non–IP participants was 44.2 years for while it was 48.2 for IP participants, the t- value showed significance at $p < 0.05$, indicating that there was a significant difference in mean age of non–participant and participants. By implication participants were significantly older in age than the non-participants this may be because older farmers easily participate in activities that have a tendency of improving their household wellbeing. The household size of the non–participants on an average was 7 members while it was for 8 members for IP participants. The difference in the mean of household size was significant (at $p< 0.001$), thus implying that the participants belonged to a larger household size compared to the non-participants. Farmers' years of education for the non–IP participants were 7.6 and it significantly higher than that of the IP participants (6.6) at $p< 0.1$.

Table 1: Distribution of the Socio – economic characteristics of the respondents

Characteristic	Innovation Platforms (IPs)		T-test
	Participants (n=93)	Non-participants (n=107)	
Age (years)	48.2	44.2	2.017**
Male (%)	81.8	76.6	
Married (%)	92.5	84.1	
Education (years)	6.6	7.8	1.860*
Household Size (#)	8	7	3.647***
Farming Experience (years)	26.8	22	2.443**

Stakeholders' participation in innovation platform and their livelihood outcomes

The livelihood outcomes were assessed and discussed with respect to the five types of livelihood asset capital namely social, natural, financial, human and physical. In order to validate the credibility of our findings, a non-parametric test of hypothesis was done (*kruska-wallis*). However, the chi-square value of 3.732 was obtained which was significant at 10 percent significance level.

Social capital: The participation in the innovation platforms of Humidtropics have landed the stakeholders with a whooping social capital asset value of 0.82 while the non-participants were just with 0.33 asset value in relation to their social capital. Among the social capital indicators, participants to the innovation platforms recorded higher weight except number of extension visit. By implication, being a stakeholder in the innovation platforms of the Humidtropics has brought about social empowerment which tends to have effective capability of improving sustainable livelihood, reduce menace of poverty and also has the power to mitigate shocks to income and food supplies in times of crises. The findings depict full, strong and productive communication between the stakeholders and innovation platforms facilitators which facilitates obtaining timely feedback on policy and improves the effectiveness of platforms activities which has enhanced their social capital assets.

Natural capital: The natural capital asset value generated focused on the ownership on land, size of land and legume intercrop effect which are basically agriculture related assets. Ownership of land was significantly higher among the participants (0.84) than the non-participants (0.74) which enhances their chances of adopting and practicing every innovation disseminated to stakeholders on the platforms. Collectively, participation in the innovation platforms of Humidtropics considering the three indicators position the participants to earned a natural asset value of 0.57 while the non-participants earned 0.52. Although the average value of natural capital does not show a remarkable increase or margin between the participants and non-participants, but it at least demonstrated a valuable and structural point for the innovation platforms stakeholders, i.e., that the changes in natural capital for the participants provide a basis for sustainable livelihood development at the present and likewise in the future.

Financial capital: The participants of the innovation platforms of Humidtropics are better off in all indicators of the financial capital except production expenditure. However, it does not came with a surprise because the participants receive production incentives such as inputs, skill acquisition and training on less cost intensive production techniques which has tremendously reduces production expenditure of the participants. Against this backdrop, participants' of the innovation platforms have a financial capital asset value larger than that of the non-participants which have lesser annual income and living expenditure but with higher production expenditure

Human capital: The human capital asset indicators used in this study was participants sensitive based on the variables available in the data sets. Unsurprisingly, the human capital asset value of the non-participants (0.00) was nowhere close to that of participants (0.77). Thus, the participants were found on the cold-spot of improved livelihood as they were well-endowed with human capital assets through their acquired skills in innovation platform activities and number of training attended on the platforms level of the Humidtropics..

Physical capital: In all indicators considered for the physical capital in this study, participants are much better off. The value of participants' physical capital assets based on the indicators (value of motorcycle, value of radio and access to energy resource) was 0.75 while that of non-participants was 0.71. These are basically productivity enhancing assets which are strongly associated with sustainable income generation which fosters the stakeholders' livelihood.

Livelihood asset pentagon

On the overall, sustainable livelihood asset (SLA) comprising all the five capitals (social, natural, financial, human and physical) was found to be tremendously higher among the participants than the non-participants. Supportively, the livelihood pentagon asset (see figure 1) depicts a completed and well-formed pentagon structure which means that there is sustainability in the livelihood among the participants than the non-participants with a deformed pentagon structure.

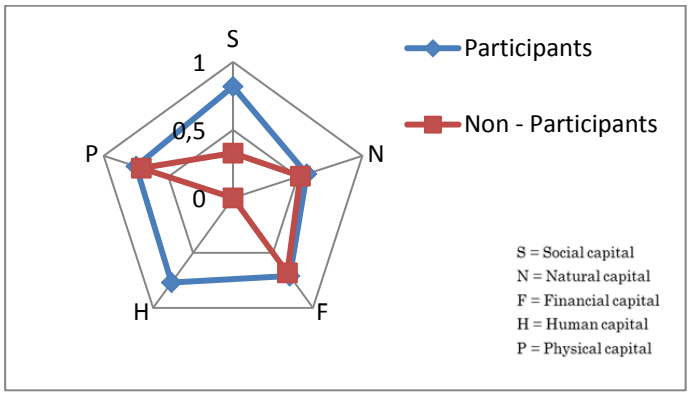

Figure1: Livelihood asset pentagon

Conclusion and Recommendation

The results revealed remarkable increase from 0 to 0.77 and 0.33 to 0.82 for human capital and social capital respectively, as stakeholders participate in Innovation platforms for research and development. The policy message from this revelation is simply that further investment should be made in the establishment and strengthening of innovation platforms that enable the development, effective dissemination and adoption of agricultural innovations, thus fostering improved livelihood, alleviating poverty and reduce food insecurity

References

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Annex 1: Effects of innovation platform participation on livelihood assets

Capital	Indicators	Participant		Non- participant	
		Weight	**Value**	**Weight**	**Value**
Social	IP membership	1	0.82	0	0.33
	No of extension visit	0.85		0.89	
	Decision making in IP	0.6		0.09	
Natural	Ownership of land	0.84	0.57	0.74	0.52
	Size of land	0.69		0.7	
	Legume Intercrop effect	0.18		0.11	
Financial	Annual Income	0.71	0.71	0.64	0.68
	Production expenditure	0.73		0.75	
	Living expenditure	0.68		0.66	
Human	Acquired skills in IP activity	0.82	0.77	0	0
	No of training attended	0.72		0	
Physical	Value of Motorcycle	0.68	0.75	0.63	0.71
	Value of radio	0.72		0.7	
	Access to energy source	0.84		0.79	
LA			0.72		0.45
Kruskal Wallis Test		$\chi^2 = 3.732, p < 0.10$			