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Women's vulnerability in bean value chain development at the Maendeleo innovation platform, Eastern DRC

R.M. KALIBWANI,^{1*} S.O. NYAMWARO², B.WIMBA³, A.MUKE⁴, M. KAKURU⁵, M.M. TENYWA⁶, J. MUGABO⁷, and R.A. BURUCHARA⁸

¹Department of Agriculture and Agribusiness, Bishop Stuart University, P.O. Box 9, Mbarara, Uganda

²PABRA, International Centre for Tropical Agriculture (CIAT), P. O. Box 6247, Kampala, Uganda

³Socio-economics Department, Institut National pour l'Etude Recherche Agronomique (INERA),
D. S Bukavu, DR Congo

⁴Agronomy Dept, Institut National pour l'Etude Recherche Agronomique (INERA), D. S Bukavu, RD. Congo

⁵Bioversity International, P.O. Box 24384, Kampala, Uganda

⁶Department of Crop Production, College of Agricultural and Environmental Sciences, Makerere University,
P.O. Box 7062, Kampala, Uganda

⁷Socioeconomics Department, Rwanda Agriculture Board (RAB), P. O. Box 5016, Kicukiro, Kigali, Rwanda

⁸International Center for Tropical Agriculture (CIAT-Africa), Nairobi, Kenya

*Corresponding Author: rmkalibwani@yahoo.com; rmkalibwani@as.bsu.ac.ug

ABSTRACT

Value chain development in post conflict countries should not only deal with the technical issues of the value chain, but with women's gender needs, and even more critically understand and address their vulnerabilities. The aim of this study was to investigate the vulnerabilities of women involved in a bean value chain development intervention at the Maendeleo Innovation Platform in Eastern DRC. Specifically, the paper first discusses the roles of women and men in the value chain, what production resources and benefits they access and control, the role of the IP as a vehicle for women's empowerment, and identifies women's gender needs. Secondly, the paper identifies women's vulnerabilities, and the capacities that the IP could build on, to support their participation in bean value chain development. Using gender analysis tools, the study shows that in addition to the lack of control of productive resources, household assets and the benefits of their labour, women have been traumatized by the rampant sexual violation and gender-based violence in the region. The innovation platform should consider including legal, mental health and psycho-social counselling service providers as stakeholders in its activities to develop the bean value chain.

Key words: Beans, DR. Congo, innovation platform, value chain, vulnerability, women

RÉSUMÉ

Le développement des chaînes de valeur dans les pays ayant expérimenté des conflits ne devrait pas seulement traiter des problèmes techniques, mais aussi les besoins des femmes en ce qui concerne le genre, et même comprendre et traiter de façon critique leurs vulnérabilités. Le but de cette étude était d'analyser les vulnérabilités des femmes impliquées dans une intervention de développement des chaînes de valeur du haricot à la plateforme d'innovation Maendeleo dans l'est de la RDC. Le présent document traite spécifiquement des rôles des femmes et des hommes impliqués dans la chaîne de valeur, des ressources de production et des avantages auxquels ils ont accès, du rôle des plateformes

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d'innovation comme moteur d'autonomisation des femmes. Par ailleurs, nous avons étudié la vulnérabilité des femmes et les capacités sur lesquelles les PI pourraient se baser pour soutenir leur participation au développement de la chaîne de valeur des haricots. À l'aide d'outils d'analyse d'approche genre, l'étude montre que, outre le manque de contrôle des ressources productrices, des actifs des ménages et les avantages de leur travail, les femmes ont été traumatisées par les violations sexuelles et les violences sexistes généralisées dans la région. La plateforme d'innovation devrait envisager d'inclure des prestataires de services de conseils juridiques, de santé mentale et psycho-sociale en tant qu'acteurs d'activités visant à développer la chaîne de valeur du haricot.

Mots clés: Haricots, RD Congo, plateforme d'innovation, chaîne de valeur, vulnérabilité, femmes

INTRODUCTION

The development of commodity value chains is increasingly being used by development agencies and governments of developing countries worldwide in efforts to raise household incomes and fight poverty. Common bean, a generally important grain legume in small holder farmers' cash income strategies, food and nutrition security, in Eastern and southern Africa (Rusike, 2013), has therefore become the target of many value chain development interventions. While in general such efforts have resulted in positive economic improvements for poor households, it has also been established that they lead to different production and consumption changes for men and women (Paolisso and Regmi, 1992). Women in most cases control the production of food crops for household consumption, and any income that arises from these crops. But with commercialization, evidence shows that often there is differential and inequitable increase in workloads for women, as well as the loss of control of the products of their labour. They therefore have less income under their direct control for food, health and other household essentials (Paolisso and Regmi, 1992; Fischer and Qaim, 2012). Notwithstanding, women have greater vulnerabilities to health and mental health concerns in post conflict situations, which exacerbate the existing gender inequalities.

one of the most vulnerable segments of society during wars and conflicts are disproportionately disadvantaged in terms of personal safety, access to resources, and human rights (Jansen, 2006; ESCWA, 2007). Moreover women constitute the majority of refugee and internally displaced populations (UNFPA, 2002). Although gender-based violence almost always, and across all cultures, disparately impacts women and girls, due to their subordinate status worldwide, in periods of conflict, they may be at even greater risk of gender-based abuses. These include sexual abuse, and battering among others. Sexual and other forms of gender-based violence are common in conflict settings and are known risk factors for mental health and psychosocial wellbeing of women (Tol *et al.*, 2013). Jansen (2006) laments that "the harm, silence and shame that women experience in situations of armed conflict is pervasive: their redress, almost nonexistent, their situation has been systematically neglected." In such situations, women's productivity, as key actors in a food crop value chain, is therefore greatly compromised. Although such vulnerability is well documented by humanitarian agencies (March *et al.*, 1999; FAO/WFP, 2005; Tol *et al.*, 2013; Hassan *et al.*, 2015), its consideration in development interventions, such as value chain development approaches, is still difficult.

Gender inequality is magnified in situations of conflict and war, and women who represent

ICRC (2011) defines vulnerability as referring to the precarious living conditions of individuals,

households or communities in the face of a threat in the form of an abrupt change in environment, where such a change may typically be the result of an armed conflict among other things. ICRC (2011) recommends that while the degree of women's vulnerability and hence the type of action necessary for responding to the needs clearly depend on the circumstances, in each situation, a thorough needs assessment is required to determine the most vulnerable groups, and that the possibility of women's specific situations and needs must always be taken into consideration. Fionnuala (2011) observes that women bear acute care responsibilities in most societies and also disproportionately bear familial and communal care responsibilities in communities affected by disaster, war and natural emergencies. Fionnuala (2011) also observes that while tacit acknowledgement of this reality increasingly permeates academic and political discourses, the depth of the descriptive often fails to capture and fully grasp the extent of gender harms and vulnerabilities. This paper throws light on women's specific needs and highlights their vulnerabilities in the post conflict situation at the Maendeleo Innovation Platform (IP), Eastern DRC. The purpose of this paper is to enable the establishment of a bean value chain development intervention that would be relevant in the post-conflict situation of Eastern DRC. With the aim to highlight the vulnerabilities of women involved in a bean value chain development intervention at the Innovation Platform (IP), the objective of the paper is two-fold. First, the paper discusses the roles of women and men in the value chain, what production resources and benefits they access and control, and the role of the IP as a vehicle for women's empowerment. These lead to identifying the women's gender needs. Secondly, the paper identifies women's vulnerabilities, and the capacities that the IP could build on, to support their participation in bean value chain development. The paper is based on a study that was conducted in

December, 2015.

METHODOLOGY

Study Area and Context. Maendeleo IP in Eastern DRC is one of the 12 IPs that were established by the sub-Saharan Africa Challenge Programme (SSA CP) of the Forum for Agricultural Research in Africa (FARA), in the Lake Kivu region to test the Integrated Agricultural Research for Development (IAR4D) concept. Located in Kisigari Groupement, Rutshuru Territory of North Kivu Province (Figure 1), the IP was established in 2008 to enable the enhancement of household incomes through bean value chain development. Common bean is an important staple crop in Eastern Congo, and is traditionally regarded as a women's crop (Rusike, 2013). The IAR4D concept would bring together different stakeholders along the value chain, together with partners to discuss the challenges of developing the value chain in a forum known as an IP. A wave of armed conflict that hit Eastern DRC in 2009 left hundreds of the residents of Rutshuru killed while others were displaced to other internal settlement camps (becoming internally displaced persons – IDPs) and to external settlements in the neighbouring countries, becoming refugees (Oxfam, 2010). Since its establishment, however, the Maendeleo IP still exists, although the entire territory remains insecure with sporadic incidents of banditry activities. The majority of the IP members are therefore IDPs who are continually traumatized by banditry activities and the membership of the IP also therefore fluctuates from time to time.

Sampling procedures. Maendeleo IP consists of seven 'antennae' or branches. Four of these were regarded by the IP leadership to be the most active at the time, and these were purposively selected for the study. These were Kako, Kalengera, Rubare and Ntamugenga. A random sample of 91 IP members was drawn from a sampling frame of a total of 304 members

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of the four selected branches of the IP, in order to undertake a household survey in December, 2015. Four key informants were also identified. These included the Maendeleo IP chairman, Kako Antenna chairman, a Community Educator, and a Community Psychologist. Women members of the selected IP branches were invited for a group interview to gain an in-depth understanding of women's issues at the IP, and supplement the responses from the survey. A total of 28 women turned up for a structured interview in a meeting that was held in Rubare centre, Kisigari groupement, of Rutshuru Territory. Due to the rampant nature of the challenge of sexual abuse to women as reported by ICRC (2001), Oxfam (2010), Tol *et al.* (2013) and others, three anonymous women victims of sexual abuse who consented to be interviewed were identified around health centres. These were interviewed by the Psychologist in order

to gain more insight into the challenge of sexual abuse on women in the study area.

Data collection and analysis. First, data were collected from the four key informants on the socio-cultural aspects of the area. Then quantitative data were collected from the 91 IP members using a structured questionnaire in a household survey. Some of the information solicited included socio-economic characteristics of the members, bean production, marketing issues and trends, and related issues. Collected household information and data were cleaned, coded and entered into an Excel Sheet. Same data were imported into SPSS Version 20 for more descriptive statistics. More qualitative data were collected from the three women victims, and their experiences are shared in short stories.

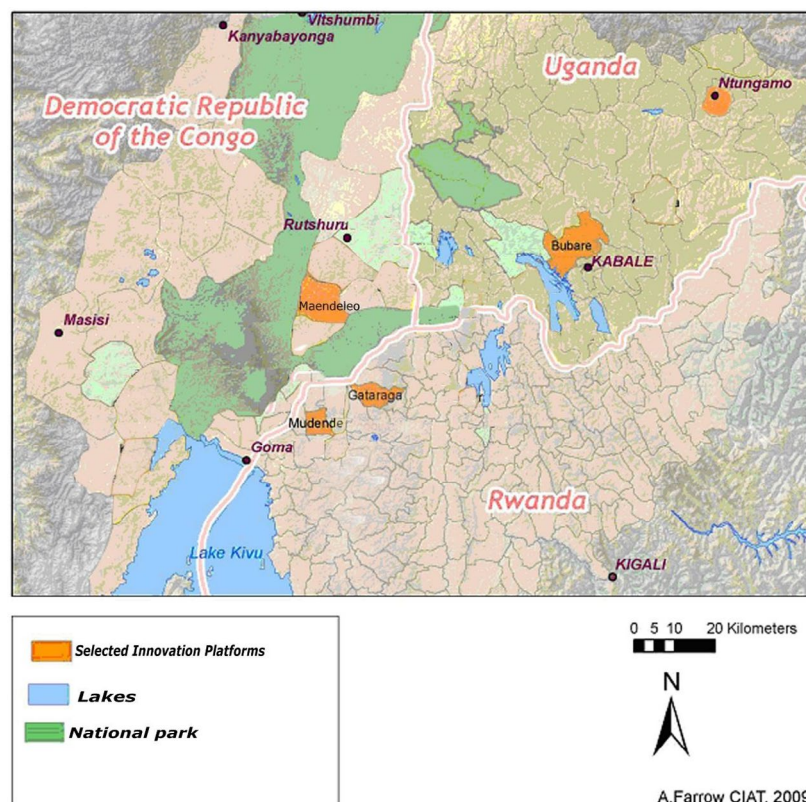


Figure 1. Map of the Lake Kivu region showing the location of Maendeleo IP

A structured interview was also held with the group of women IP members. In the interview, we used various gender analysis tools in order to gain insight of roles and relationships within the sampled population of the Maendeleo IP, and along the bean value chain. The tools used were; the activity, access and control profiles, a women's empowerment (Longwe) framework, gender needs assessment (Moser framework), and the Capabilities and Vulnerabilities Analysis (CVA). The tools used are further described below.

1. Activity, access and control profiles. The two profiles use the Harvard Analytical framework (March *et al.*, 1999; UNDP 2001) to establish who in the household does what, and what this means for their time use. The Activity Profile is a tool that assists in identifying the productive and socially reproductive activities of women and men, girls and boys, while the Access and Control Profile identifies whether women or men have access to resources, who controls their use and who in the household or community controls the benefits from them.

2. Women's empowerment in the IP. Women's empowerment was analyzed using the Longwe Framework (March *et al.*, 1999). With this framework, women's empowerment is defined as "enabling women to take an equal place with men, and to participate equally with men in the development process in order to achieve control over the factors of production on an equal basis with men" (UNDP, 2001). The framework uses five levels of equality by which to assess the level of women's empowerment; Control, Participation, Conscientisation, Access, and Welfare. Further, in the same framework, the level of recognition of 'women's issues' by the IP is established either as negative, neutral or positive. This enabled the identification of the 'issues' that needed attention.

3. Gender needs assessment. The assessment was done within the Moser framework. In this

framework, women are seen as having particular needs because of their triple role (responsible for production, reproduction and community activities), as well as their subordinate position to men in society (March *et al.*, 1999; UNDP, 2001). Specific women's gender needs were identified using this framework. The needs were further distinguished into practical gender needs and strategic gender interests / needs.

Practical gender needs. According to March *et al.* (1999) and FAO/WFP (2005) these are needs that often relate to living conditions. Practical needs are defined as those that relate to socio-culturally accepted roles in society and do not challenge gender divisions of labour or position in society. For women, these may include safe water, food, health care and cash income. These are generally family needs but women perceive them to be their own since they are responsible for providing them to their families (March *et al.*, 1999; FAO/WFP, 2005).

Strategic gender needs. These are needs that women themselves identify as due to their subordinate position to men in their society. They relate to issues of power and control, and to exploitation under the sexual division of labour. They are needs that relate to improving roles and contributions in society. They include legal rights, an end to domestic violence, women's control over their own bodies, among others (UNDP, 2001; FAO/WFP, 2005). In this study, women's practical and strategic gender needs at the Maendeleo IP were identified with this framework, in order to establish areas for IP intervention.

4. The Capabilities and Vulnerabilities Analysis (CVA). The CVA framework was designed to help agencies plan aid in emergencies, in such a way that interventions meet immediate needs, and at the same time build on the strengths of people and their efforts to achieve long-term social and economic

development (March *et al.*, 1999). The analysis is based on the central idea that people's existing strengths (or capacities) and weaknesses (or vulnerabilities) determine the impact that a crisis has on them, as well as the way they respond to the crisis. Capacities are described as the existing strengths of individuals and social groups. They are related to people's material and physical resources, their social resources, and their beliefs and attitudes. Vulnerabilities on the other hand are the long-term factors, which weaken people's ability to cope with sudden onset of disasters, or with drawn-out emergencies. In this context therefore, March *et al.* (1999) note that vulnerabilities are not needs as in the sense of practical and strategic gender needs that may require short-term practical interventions, but will require long-term strategic solutions which are part of development work. In this study therefore, the CVA is used to identify vulnerabilities of women and areas of intervention that can be addressed to enhance

their participation along the bean value chain.

RESULTS AND DISCUSSION

Socio-economic characteristics of Maendeleo IP members. Out of the total of 91 household members sampled, 74 (81%) were men, while 17 (19%) were women. Eighty two (82) (91%) of the sampled households were male headed, while 9 (9%) were female headed. All of the sampled members were engaged in farming as their major occupation. Common beans is traditionally considered as a 'woman's crop' in Eastern DRC, and women use it for household food and income for both personal and family needs. The main purpose for growing beans according to the respondents was to provide food (57%) and income (12%), while 31% of them indicated that beans are used to provide both income and food. Half of the female headed households indicated that they were growing beans both for food and income, while half of the male headed households considered

Table 1. Selected socio-economic characteristics of the IP members disaggregated by gender

Variable	Male	Female	Total sample	t-value	Chi-square
Mean age (years) (n=91)	49.47	53.0	50.13	1.026	-
Mean no. of years spent at school (n=91)	5.38	0.82	4.53	4.681***	-
Never went to school (n=43)	28 (65.1%)	15 (34.9%)	43 (47.3%)	-	14.087***
Mean land owned (acres) (n=90)	2.8	2.4	2.81	0.215	-
Mean no. of land parcels accessed (n=88)	2.15	2.27	2.17	0.440	-
Access to extension services (n=85)	37 (88.1%)	5 (11.9%)	41 (47.1%)	-	1.884
Mean acreage under beans (n=86)	5.7	13.66	7.18	1.545	-
Mean bean harvest (kg) (n=89)	244	165	231	0.465	-
Mean bean income (n=52) (CF)	102,380	136,880	109,020	0.505	-
Livestock ownership (n=87)	36 (87.8%)	5 (12.2%)	41 (47.1%)	-	1.983
Mean livestock value (CF) (n=79)	63,632	24,377	57,173	2.193**	-
Distance to point of sale (km) (n=61)	4.82	1.59	4.23	0.875	-
Distance to major market (km) (n=84)	3.2	2.3	3.096	0.508	-

***, **, * Significant at 1%, 5%, 10%, respectively

Source: Household survey, December 2015

beans to be mainly for food. The development of the bean value chain is therefore important for the women to enable them ensure not only their household food and nutrition security, but also their income.

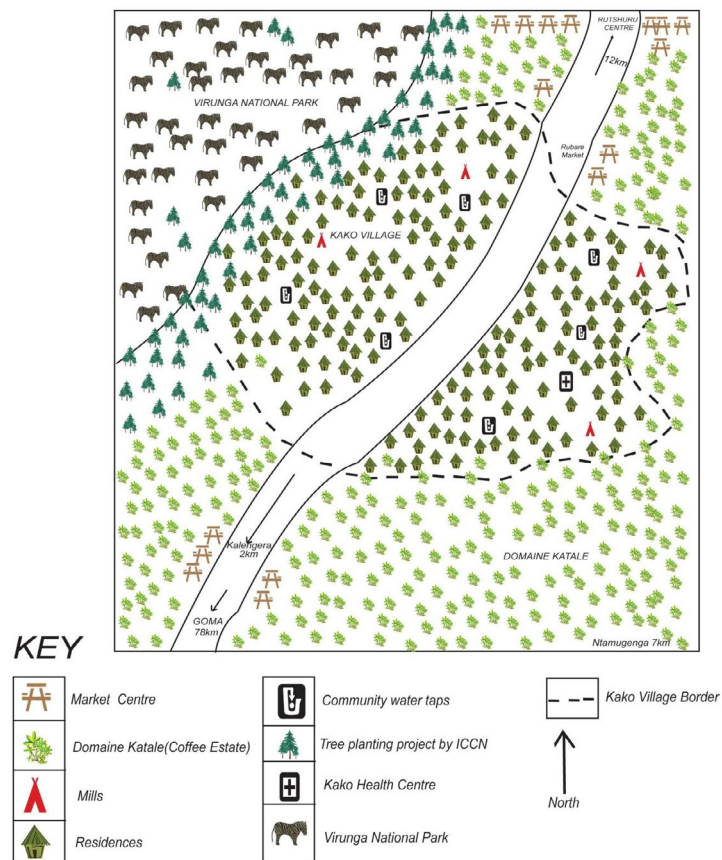
Selected socio-economic characteristics of the IP members were analyzed to establish their relative position and resource endowment as key actors in the value chain (Table 1). Although the ages of men and women IP members were not significantly different, women members were observed to have received less formal education than their male counterparts. On average, women IP members did not go to school for long (0.82 years), well below the sample mean of 4.5 years, and the difference between the men and women is significant at the 1% level. Further, 43 members from the sample were found not to have been at school at all, and 15 of these were women. This represents nearly all the sampled women. The difference between the men and women who did not go to school is significant at 1% level. The education level of the farmers is an important factor in agricultural interventions because it facilitates access to extension services, determines who adopts new technologies and the rate of adoption, among other things. Women have been known to be excluded from access to extension services and hence exhibit poor adoption of new technologies due to lack of formal education. While extension provision in developing economies remains low for both women and men, women tend to make less use of extension services than men. This is because the lower levels of education may limit their active participation in training that uses a lot of written materials (FAO, 2011).

The mean acreage under beans was higher for women at 13.6 acres compared with men at 5.7 acres. The difference was significant at the 5% level. This is expected considering the importance of beans to women IP members, for food and income. However, it is worth noting that

IP members in general do not own land. This is partly because many of the members are majorly IDPs from all over the North Kivu Province, and on the other, Maendeleo IP is located in an area that is surrounded by a National Park and a large private coffee plantation, Domaine Katale. Farmers have access to parcels of land that are near their homesteads, as well as rent other parcels from proprietors of the coffee estate. This situation is illustrated by the Kako Village Resource Map in Figure 1.

Kako Village is a typical village in Kisigari Groupement and has a branch of the IP called Kako Antennae. The village has a population of 5,413 people in 1,003 households. Women and men farmers have to find parcels of land to cultivate at the beginning of every planting season. That women can access a larger acreage to plant beans shows extra effort on their part in searching for fields to raise food and income for their families, in a situation where land is scarce. The general impression from the women's group interview however, was that the major challenge for them was not access to many parcels, but that parcels of land that were further away from the homesteads exposed them to sexual assaults by bandits from the surrounding bushes. This is a challenge that has already been observed in situations of armed conflict (ESCWA, 2007). Displacements impact women disproportionately given that this reduces access to resources for coping with household responsibilities, and increase physical and emotional violence. In addition, during conflicts, everyday activities such as fetching water, for example, can expose women to physical assaults, sexual violence and rape (ESCWA, 2007). These crimes are rampant in remote rural areas that are far away from general media coverage (FAO/WFP, 2005). At the Maendeleo IP, women farmers are constantly living in fear when searching for parcels of land, which should not be far from their homesteads for their safety. However, the total acreage of land owned and

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Developed with key informants: Magazini Katembo, Maendeleo IP Chairman; Leonard Lokero, IP Chairman, Kako Antennae; and Etienne Bigirimana, Community Trainer, Ntamugenga (Dec, 2015)

Figure 1. Kako Village Resource Map

number of parcels accessed was significantly different between men and women.

The value of livestock owned is an indicator of someone's endowment (Ssebatta *et al.*, 2013), and a measure of the value of assets that a household owns and can be transformed to cash when need arises. Livestock are one of the largest non-land assets in rural asset portfolios and widely owned by rural households in Eastern and southern Africa (ILRI and IDRC, 2013). The most common types of livestock owned by the members of the IP were cattle, which were also the most valuable, goats, chicken and covies. Men mostly owned the cattle and goats, while women owned some goats and chicken. Covies were commonly owned by children both for their income and as pets. The results show

that men either owned more livestock numbers or the more valuable livestock than the women. This implies that the men owned and controlled more value of household's endowment than women, a finding that was significant at the 5% level. This has implications on the ability to make better investment in the bean enterprise by the women farmers. Better investments would involve purchasing improved seed, fertilizer, accessing larger and more fertile parcels of land, which are likely to be more expensive. All these would require sufficient financial resources, which the women comparatively did not have. Not surprising, in spite of accessing larger acreages to plant beans, mean bean harvest and income were not significantly different between men and women.

Activity Profile. An Activity Profile was constructed with the IP Women's group. It shows the activities undertaken by members of a household; men, women, boys and girls, along the bean value chain (Table 2). This profile is a representation of the rest of the community's activity profile, and shows that in this community, the bean value chain stages consisted only of production and marketing.

Most of the activities, from ploughing to marketing are done by women. Production begins with searching for field parcels to plant the beans. As explained earlier, the majority of IP members do not own land, but they can access it by renting parcels from those who own and the proprietor of the coffee estate who happens to have parcels that can be rented out. The major challenge for the women is to be able to access parcels near homesteads for their safety. Since searching for a field is an activity that is done by both men and women, at times the men can afford the conveniently located parcels for the women in their households. Women who may not afford the expensive parcels are pushed to distant and cheaper locations. Sometimes they opt not to use such parcels due to the fear of

attacks in those locations. Such women are often household heads, and others whose husbands for one reason or other will not look for the field.

Land clearing is mostly a man's job, but women who do not have a man in the house hire someone to do it if they can afford it. When a woman finds that she cannot afford to hire someone, they decide to do the minimal clearing that they are able to do. This has implication on the production, which cannot be optimized in such situations, but shows the need that women have to provide food for their families whatever the circumstances. Ploughing is done by all members of the household. The rest of the activities are done mainly by women. These include sowing, weeding, harvesting, carrying the harvest home, drying, de-husking, sorting and packing. Boys and girls assist the women when they are not at school.

The bean grain at this stage is divided up into three portions; some to be used as seed in the following planting season, some to be kept for food, and some to be taken to the market for sale. It should be noted that the marketing of beans is done by women. Where the portioning

Table 2 Activity profile in bean production and marketing at the Maendeleo Innovation Platform

Activities	Men	Women	Boys	Girls
Production				
Searching for field parcels	*	**		
Land clearing	**		*	
Ploughing (1st and 2nd)	**	**	*	*
Sowing		**		*
Weeding		**		*
Harvesting		**		*
Transporting to the house		**	*	**
Drying, de-husking, sorting, packing		**		*
Portioning	*	**		
Treatment		*		
Marketing		*		

**mostly done, * sometimes

(Source: Maendeleo IP Women's focus group discussion, Dec, 2015)

is done by a man, he makes the decision on the quantity that the woman will take to the market, and the quantity that will be used for food. If it is the woman to apportion the grain, she is also faced with the same decisions. However, it is likely that men and women will have different considerations in mind when they make decisions about the quantities. Marketing of beans is mainly done in the village markets (52%) by women. The average distance to a point of sale is 4 km (Table 1) and the most common mode of transport is carrying on the head (77%). It is mainly women and girls who carry the beans on their heads. Otherwise those who do not take their beans to the village markets (44%) sell them at home when traders collect them on their bicycles. There is no major bean processing. The beans are sold only as dried grain. Most of the activities, from production to marketing are done by women who mostly use their physical labour and time.

Access and control profile. The Access and Control Profile below (Table 3) was developed with the IP women's group. It shows that although women have access to most household resources, they control very little. They have access to the land for bean production, the house

where the family lives, and the store where they keep the beans. They also have access to the bean income. Men on the other hand have access to all the household resources, and control all except some livestock types, especially goats and chicken, which are mainly controlled by women. Some women, especially heads of their households, are able to access credit and control it when they obtain it. Otherwise it is the men who determine whether a woman will attend a training or not, and what the revenue from the beans will be used for.

Women's empowerment. The Women empowerment tool was used to identify the extent to which the IP has enabled women's empowerment. The women were asked, in their view, whether they perceived the IP management and activities to have pursued equality between men and women in the selected components of this framework; welfare, access, conscientisation, participation and control. They were further asked to give their view of the level at which the IP recognized 'women's issues'. In general, the women appreciated that the IP pursued equality between men and women in providing welfare, accessing the IP, and ensuring participation. However, there was

Table 3. Access and Control Profile

Household resources	Access		Control	
	Women	Men	Women	Men
Land	+	+	+	+++
Cash	+	+		++
Material assets e.g. bicycle, motorcycle, tools, <i>chikudu</i>		+		+
Animals e.g. cows, goats, chicken etc		+		+
House, store	+	+	+	++
	+	+		+
Credit	+	+	+	++
Training	+	+		++
Benefits:				
Revenue from beans	+	+	+	++

+ Access/Control, ++more access/control, +++most access/control

general agreement among them that the IP did not pursue equality to ensure women's control of both IP processes and household resources. Twenty-four (24) women gauged the level of recognition of women's issues at the IP to be negative, while four (4) were neutral.

The selected components of the framework are further discussed below.

Welfare. Soon after the IP was established in 2009, armed conflict broke out. The intended activities for the development of the bean value chain stalled. However the IP became instrumental as a forum that was used to communicate information about the war, and to advise members of the community on safety measures to take. Information was equally given to both men and women. All other information concerning the welfare of individuals and families, was also equally made available to both men and women. The women were thus in agreement that the IP was concerned about their welfare.

Access. The women agreed that they had equal access to opportunities such as trainings, markets and land for production. However, they also agreed that they had limitations as women. Access to trainings depended on permission being granted by the husbands, and there were many cases when permission was denied. Women are commonly known to market beans in the DRC, and hence their access to markets especially the village markets was not a problem for them. However, more women were marketing at farm gate because of long distances to would-be preferred markets. They therefore get lower income from their beans. If a collective marketing strategy would work out, it would improve this situation. At the same time, the challenge of having to look for a field to cultivate every season affect especially poor female headed households. The IP has not yet considered a special arrangement to search

collectively for safe fields for its members. This would perhaps enable more women to access safe fields for cultivation. Therefore although access to trainings, markets and land, is for both men and women, the IP has not given special consideration for women's limitations.

Participation. The IP, through the IAR4D concept, regards the participation of different social groups and gender, at all levels as a key principle. The IP has therefore encouraged especially women to participate with the men in the IP meetings, activities and decision making. Women have been encouraged to take up leadership positions in the IP executive committee as well as the committees of the seven IP antennas. In each of these committees there is at least a woman vice chairperson, secretary, treasurer or a committee member, a move that is very well appreciated by the women.

Conscientisation. Apart from the awareness about equal participation in meetings and leadership, the women felt that the IP was not aware of any other gender issues beyond that. The IP had no special programmes for women's issues, and no special trainings to raise the awareness of the members on gender issues.

Control. The women in the group discussion indicated that they did not have control over productive resources, household assets, as well as the sales from the beans, and the IP had no intervention in this area. Therefore on the level of equality, the IP has done well at the lower levels of the framework; Welfare, Access and Participation, but is yet to deliver sufficient conscientisation on gender issues and control to the women.

On the level of recognition of women's issues, 4 out of 28 women rated the IP as neutral, while 24 rated it as negative; according to this later on group the IP did not address women's issues. None of the women considered the IP as positively

Women's vulnerability in bean value chain development at the Maendeleo innovation platform

concerned about women's issues (Table 4). This for them means that enabling equal participation and having equal opportunities with men did not necessarily address women's issues. "What then, are women's issues at the Maendeleo IP?" We conducted a gender needs assessment in order to understand what the issues might be.

Gender needs assessment. A gender needs assessment was carried out to establish the needs women have as a consequence of the above identified roles, tasks and responsibilities. These would then be used to establish areas for IP interventions in as far as gender issues (disparities, inequalities, and prejudices) are concerned. Table 5 shows identified women's specific gender needs. The women identified the needs for firewood, land for cultivation, improved cooking stoves, water for domestic use, access to better markets and more trainings. It was observed that already there were a number of non-governmental organisations (NGOs) in Kisigari groupement that were offering services aimed at alleviating women's practical needs. For example, the Institut Congolais pour la Conservation de la Nature (ICCN) and the United Nation's High Commission for Refugees (UNHCR) are involved in a tree planting project that is expected to provide firewood for families' cooking needs so that they do not encroach on the trees in the national park (Figure 1). A local NGO, Comité pour le Développement Communautaire (CODECO) is also involved

in the provision of safe water for home use. Several water taps have been constructed in the community. In Kako village, there are seven such taps. There is also a well-established Centre de Sante (Health Center) in every village.

One of the women's strategic needs at the IP is the need for legal services. Women often need legal redress in situations of domestic violence and unfair use of household resources. There are organisations that offer such services although many of them do so at a fee. Women cannot afford the services. The women also need special training in savings, borrowing and use of credits. Although organisations such as Association villageoise d'épargne et de crédit (AVEC) (Savings and Credit Association) exists, the IP women would appreciate the service on the IP. All the women grow beans, but it is still difficult to get them to market collectively in order to attract big buyers and achieve better bargaining position. The major reason why they cannot market collectively is lack of trust for each other. The situations of war that they have undergone through, have traumatized communities both men and women, created mistrust among them, and a situation of emergency where everyone wants to sell his / her produce as fast as possible. Although the IP is expected to leverage on this, collective marketing has not yet had much success.

Communities in this region have been

Table 4. Women's specific gender needs

Practical needs	Strategic needs
Firewood	Recognition of women's challenges along the value chain
	Training in savings and borrowing
Land	Legal services
Improved cooking stoves	
Water for domestic use	Collective marketing
Better Markets	Psycho-social needs
Attending trainings	

Source: Maendeleo IP Women's focus group discussion, December, 2015.

devastated by the gender-based violence. In particular women are already in constant fear of sexual abuse when they have to go far from the homesteads. The alarming rate of sexual violation in this region as a result of armed conflict is recorded (Oxfam 2010; Tol *et al.*, 2013). The women that have already fallen victim of such sexual violations have terrifying

stories of their experiences with violation, dealing with stigma, and their struggle to find a place in society after such experiences. These experiences impact negatively on the women, their men, and children (Oxfam 2010). Three of these women were interviewed and their experiences are shared in Box 1.

Box 1. Solange, Zawadi and Pendeza (not their real names) are victims of sexual assault in Kisigari Groupement, Eastern DRC

Solange, 48 years, is married and has seven children, four girls and three boys. She lives in Rubare village. Her main occupation is farming, but she also does petty trade, selling beans. Solange has been violated three times; in 2007, 2009, and 2014. The three incidents each happened during the day, when she was in the field. She recalls that they were armed bandits; four in 2007; two in 2009; and one in 2014. Although she did not get pregnant, she now lives with HIV/AIDS. After the incidents, life has not been easy for her living in the same community. She is stigmatized by the community and feels neglected, her husband is always suspicious, and her children are stressed because of referring to them as the children of the woman who was raped. She narrates her ordeal sobbing.

Solange is not a member of the IP although she has heard about it. She also knows some IP members in her village and she too would like to be a member. However she fears to interact with others and is ashamed of her situation. She has two fields where she cultivates beans, maize and cassava, at a walking distance of 1 ½hrs from her home.

Zawadi, 39 years old, lives in Kanyachi village. She has seven children; four girls, three boys. She was married but now separated since her husband abandoned her after she was assaulted. He married someone else. The incident took place in 2006, during the day when she was in the field. She recalls that they were four armed bandits. Since the incident happened, she is weak and often ill. 'The community does not seem sympathetic and the children miss their father since he left' ... she narrates in tears. Her field is 3 hours walk from her residence. She has heard about the IP but she is not a member. She does not see reason to join the IP but she would consider if the IP had a savings and credit scheme. She harvests up to 100kg of beans and would like to have money to invest in more production. She has to look after the family as a single mother.

Pendeza, 21 years, is married with three children; two girls, and one boy. She is a resident of Kalengera. Her main occupation is farming. Three men, two of whom were armed, broke into her house at night. They raped her and looted all their property. The husband has a bad attitude towards her and always suspicious. The children were young and never understood what happened but the community regard her with stigma. She feels isolated and very fearful.

Pendeza is not a member of the IP but she would like to join. She has reservations for not joining the IP. She is able to harvest 100kg of maize and 100kg of beans per season. She would like to get money to trade in fish.

Interviews were held in Kalengera and Rubare by a Community Psychologist from Goma

Source: Maendeleo IP Women's focus group discussion, December, 2015.

The Women IP members indicated that none had fallen victim of such sexual violation, and so the three identified women were non IP members. Considering that these are needs that the women themselves never bring out for open discussion, they are never discussed in the IP as challenges of the bean value chain. Yet these needs are real challenges that impact the productivity of the women as key stakeholders of the bean value chain.

A multi-stakeholder approach to development in this region ought to integrate legal, savings and credit, mental health and psycho-social counselling services as key women's strategic needs. In particular, Oxfam 2010 recommends that mental health and psycho-social counselling should involve men and women, as well as children to enable families recover as a unit. The respective service providers should be involved in the IP as stakeholders in bean value chain development.

Capacities and vulnerabilities analysis

The capacities and vulnerabilities of the farmers / IP members were identified, and categorized into three; physical, organizational and motivational as shown in Table 5. The most eminent vulnerabilities cut across both men and women. The war that has struck three times in the past has left communities traumatized. Some men were forced to join armed forces during the war, and were killed. Other men escaped to neighbouring countries and never returned. Both men and women have lost relatives, but many women that survived and those whose husbands never returned are single mothers and heads of their households. Such women do not have enough money to hire labour, purchase better inputs, and yet women have fewer income generating opportunities and assets than their male counterparts. In addition, women live in constant fear of sexual assault because the bandits still exist in the region. The presence of the national park on one hand creates a suitable

environment for banditry activities, and on the other, leaves households without farm land since they cannot encroach on the land gazetted for the park. Also surrounding this community is a large private coffee estate (Domaine Katale) that further reduces the land available for farming, although free plots (without coffee) are rented out to those who can afford them.

The capabilities that can be used to support the development of the bean value chain include the good climate and fertile volcanic soils of the region which still have the potential to support an overwhelming increase in bean production. The choice of beans was a strategic one particularly for women given its importance to them as a food and nutrition security, and income generating crop. The IP has remained a strong and recognized institution in the community even through the turbulent times. Due to the requirements of IAR4D to ensure gender equity in the operations of the IPs, women have been elected to positions of leadership; as treasurers, vice chairpersons, and committee members in their respective antennae. Women appreciate this recognition and men also accept this development. Although the women are not yet able to identify and articulate the specific gender needs without support, their presence in these positions is a good starting point to build on.

There are numerous international and local development agencies offering a diversity of required services in Kisigari and North Kivu Province in general. These services include legal, mental health and psycho-social counselling, general health, and community trainers among others. Although these are not directly linked to the bean value chain, they are in these circumstances crucial services for the mental and psycho-social health of the women IP members, who are major stakeholders of the value chain. Any strategy to increase bean production and ensure collective marketing will have to consider women members to work

Table 5 Women's capabilities and vulnerabilities at the Maendeleo Innovation Platforms

Categories	Vulnerabilities	Capacities
	Women	Women
Physical / Material e.g. What productive resources / hazards exist?)	Some men did not return after the war,	Good fertile land for cultivation, and favourable climate
	Female headed households	Presence of expertise; bean research and technology development, extension services by NGOs
	with no land, Women who cannot afford to	Existing provision of women's practical gender needs;
	hire labour, and purchase agro-inputs do without them. water, firewood, health facilities to generate income Community is surrounded by national park and domain	mills, etc. Numerous international and local organisations (AVEC, VSLA, Monde Giusto) exist, and offer a variety of services
Social / Organisational (e.g. Relationships between people, organizational structures)	Bandits still exist in the	IP is a strong and recognised structure in the community
	Community	Some women have been elected in leadership positions of the IP Beans
	Local government at the level of the <i>groupement</i> are supportive and can be mobilized for further support.	Men accept women's leadership in the IP positions
Motivational / Attitudinal	Relatives were killed, Women still reserved, fear men	Community trainers exist,
	Traumatized by the war, and rampant incidents of sexual violations	Psycho-social support exists,
	Such incidents have created shame and low esteem among victims	

Source: Structured interview with women's group

together, as well as incorporate more women farmers for larger bean quantities. Given the existing rampant sexual violations, victims and non-victims ought to learn to work together without stigmatization; non victims welcoming the victims and the latter feeling comfortable in their presence.

CONCLUSION

While women were found to participate in the two main value chain activities; production and marketing, and to access relatively larger parcels of land for bean cultivation than men, they were found to have relatively less control of productive resources and household assets. This would then limit their potential to increase investments in bean production, although they considered it a source of household food and income. The rampant sexual violations by the bandits and gender-based violence in the area impact negatively on the mental and psychological well-being of women. Women's practical gender needs such as access to firewood, safe water, and health care were being addressed by several organisations operating in the area, but the strategic gender need to access legal services was largely unmet leaving them vulnerable to gender-based violence. The IP should consider incorporating partners that offer mental health, psychosocial and trauma counselling, and legal services. These will contribute to providing social assistance to both men and women as family units, and also motivate other stigmatized women producers to join the IP for social solace. They will also revive confidence among members to strengthen collective marketing, and capacity building to operate credit and savings schemes on the IP.

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STATEMENT OF NO-CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in this paper.

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