



Impact of Women Empowerment in Agriculture on under Five Children Nutritional Outcomes in Rural Burkina Faso

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The context

Burkina Faso faces variable rainfall, land degradation, and desertification which impact its agriculture. As a result, Burkina Faso is experiencing recurring food crises and permanent food insecurity, and until 2018 the country faced a serious level of hunger (Bernstein and Wiesmann, 2019). Indeed, more than 3.5 million Burkinabe (20%) are food insecure (USAID, 2018). Women and children are the most impacted by this situation as they constitute the most vulnerable group. Many children under the age of five were suffering from (acute) malnutrition,

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as undernourishment is 21.8% and stunting at 27.3% (Bernstein and Wiesmann, 2019). According to Aitatikie (2014), nutritional status is the manifestation of factors such as access to and distribution of food in the household, availability and use of health services, and childcare. During the last two decades, there has been sufficient interest in the causes of malnutrition and ways to reduce it, but the role of women in the nutritional status of children has often been ignored.

To meet the challenge of recurrent food insecurity, the country in 2007 set up the National Policy for Nutrition with the objective to improve the nutritional status of populations particularly women and children through implementation of multisectoral interventions. Thus, the main interventions are the National Policy on Food and Nutrition Security (PNSAN 2013) with the objective to achieve sustainable food and nutrition security by 2025, and the Programme of Support to Food and Nutrition Security for Sustainable Agriculture and Resilience in Burkina Faso (PASANAD 2017) to contribute to poverty reduction through improved governance in food area and nutrition security and strengthening resilience of vulnerable households by 2021.

The problem

The economy of Burkina Faso, like most African countries, is dominated by agriculture, which provides the bulk of household income and contributes to food and population nutrition security (PSSAR, 2017). Agriculture employs more than 80% of the population, and most of the agricultural production is for self-consumption. Despite the policies to improve food security and nutrition, child malnutrition remains worrying. Indeed, the prevalence of acute malnutrition decreased from 11.3% in 2009 to 9.0% in 2017 and chronic malnutrition decreased from 35.1% in 2009 to 21.0% in 2017 (Ministry of Health, 2018). These reductions are substantial, but malnutrition prevalence is still high according to World Health Organization (WHO) classification of malnutrition level.

For instance, until 2015, nearly half of households failed to meet their cereal needs.² The main reasons remain the difficulties in identifying and accessing the vulnerable groups to benefit from policies, and the miscoordination between the multiple interventions.

Also, women are the major subsistence producers, and their main job is to produce food for the family in the fields. In Burkina Faso, about 95% of women in agriculture practice subsistence farming (produced crops mainly used to meet household or family need), and 75% of food produced for household consumption is by women (Ministry of Agriculture 2014). In addition, women as mothers are responsible for caring for children

2 European Commission http://ec.europa.eu/echo/files/aid/countries/factsheets/burkina_faso_fr.pdf.

and therefore have a greater responsibility and role in the nutritional status of their children (Malapit and Quisumbing, 2014; Heckert et al., 2019). Despite the important role played by women, they have unequal access to agricultural essential inputs such as land, fertilizers, credit, new technologies (Doss, 2011; Wekwete, 2014). This is an impediment especially in areas where agriculture is the main activity. When women have more input in productive decisions and autonomy in production, and more ownership of assets such as land, they can improve food production and consequently access to food. As a result, there is a positive effect on the child's diet and thus a positive effect on child nutritional status. There is evidence that if women held land in the same proportions as men, they would do as much as they did in terms of production (Doss, 2011). As a result, the National Gender Policy (PNG 2009), with the objective to “promote equitable and participatory development of men and women, as well as ensure equal access to resources, equal control, and equal access to the decision-making process, in respect to fundamental rights” remains relevant. It is possible that women's empowerment will have a positive nutritional outcome on children.

Background

Assessing the impact of women empowerment on children nutrition is relevant for countries where women are major players in agriculture as they are the major labour force in crop production. Studies have shown that an improvement in the decision-making power of women is accompanied by more favourable allocation of household resources to the benefit of children (Smith et al., 2003; Seebens, 2011; Bhagowalia et al., 2012; Nordman and Sharma, 2016). Therefore, better integration of women in agriculture will have beneficial effects on food availability and nutrition in households. Indeed, women's empowerment in agriculture has the potential to help shift control of household resources to them, which then becomes more likely to be directed towards child feeding and care (UNICEF, 2019). Due to the relatively high malnutrition level among children in Burkina Faso, the empowerment of women in agricultural activities can be a catalyst in the reduction of child malnutrition. Evidence shows that malnutrition can harm a child's economic prospects and, consequently, broader socio-economic development (UNICEF, 2019). For Sraboni et al. (2014), improvements in women's empowerment are positively associated with caloric availability and dietary diversity within the household. Thus, empowering women is one of the ways in which agriculture impacts nutrition (Heckert et al., 2019; Ruel and Alderman, 2013).

The research on which this policy brief is based focuses on how women empowerment in agricultural activities could improve children nutrition outcomes in rural households. It provides empirical evidence on the accurate effect of empowerment on children nutrition outcomes in agricultural households in Burkina Faso. The research is relevant for Burkina Faso context as women empowerment is not only crucial in achieving gender equity but also in increasing agriculture productivity and hunger and

poverty reduction. Thus, the study on which this policy brief is based on highlights the role of women in fighting hunger and poverty in agricultural households where they and their children are the most vulnerable. Overall, the research contributes to the literature linking women's empowerment in agriculture to child nutrition outcomes in developing countries, in Burkina Faso in particular.

Data and key findings

This study on which this policy brief is based used a nationally representative data, the Multisectoral Continuous Survey (Enquête Multisectorielle Continue, EMC) conducted by the National Institute of Statistics and Demography (INSD) in 2014. The EMC survey collected a wide range of information on households and individuals, which include household demographics, food and non-food expenditures, food security, agricultural production (land tenure, inputs costs, fertilizers, etc), the economic situation of households, the occupational situation of persons over 15 years of age, the possession of assets, access to information and communication technologies (ICT), health, education, savings and access to credit, access to social services (clean water, electricity) and under five children anthropometric information.

The literature on women's empowerment shows that there is no unanimity on the indicators to be considered in measuring the degree of women's empowerment. Authors have highlighted that empowerment is a multidimensional concept and a complex process that can be interpreted differently, as women empowered in one dimension are not necessarily empowered in the others (Sharaunga et al., 2019; Bayissa et al., 2018; Pradeep and Deeksha 2016 ; Malhotra et al., 2002).

Based on literature and data availability, the study considered five indicators of empowerment. Following Table 1, a woman is defined as empowered if she has adequate achievement in at least four of the five indicators. Thus, using the five indicators, we constructed our empowerment index, named Women's Empowerment in Agriculture Index (WEAI). Our work is to know how the level of empowerment affects children nutrition.

Table 1: Indicators of women empowerment used in the study

Indicator	EMC used variables	Modalities
Production decision	Woman decides on agricultural production activities	Yes, No
Access to land	Woman uses and/or owns land for production	Yes, No
Control over use of income	Woman has control over at least one type income (transfer, sold crop, saving)	Yes, No
Access to credit	Woman has a credit from a financial institution/informal source the last twelve months	Yes, No
Group membership	Woman participates in a social group	Yes, No

Children nutrition outcomes are measured by these anthropometrics: *height-for-age index* or long-term index and *weight-for-height index* or short term index. The height-for-age is a measure of growth. A child who is considered short for his/her age is *stunted*, a condition reflecting chronic malnutrition. The weight-for-height index assesses a child's recent nutritional deficit. A child who is considered too thin for his/her height is wasted. In our sample, about 28% of children are stunted, and 9% wasted. Empowerment index showed that women empowerment is low as few are empowered. The results show that only 2% of women in our sample are empowered (i.e. have adequate achievement in at least four of the five indicators). Most of women had access to one (43%) or two (37%) empowerment indicators.

Women are more empowered on certain indicators and less in others

About 87% of the women have made decisions about agricultural production, and 41% have control over at least one source of income. While 20% of the women participated in social group, only 9% had used and/or owned land, and 5% had access to credit.

Production decision and access to land contribute more to empowerment

Our analysis indicates that women who have made production decision and have access to land are more empowered than others. The results show that production decision and access to land contributed, respectively, by 42 and 44% to empowerment index. While income contributed by 10%, access to credit (3%) and group membership (1%) contributed the least.

Women's empowerment improved child nutrition outcomes

Our results show that women's empowerment is positively and highly correlated with child nutrition outcome. Indeed, women empowerment index favours the weight-for-height indicator by 0.397 points, and the height-for-age index improved by 0.353 points.

Child characteristics matter than household characteristics

Child sex has a significant correlation with nutrition outcome. The results show that girls benefit less from empowerment than boys. In rural households child sex preference could lead parents to take more care of boys than girls. Also, children

beyond 2 years benefit more from women empowerment than those under 2 years old. The results reveal that age of household head and household size are not linked to child nutrition outcome in rural households. The results also show that access to social service (clean water) does not affect nutrition outcomes.

Implications for policy makers

Analyzing the effect of women's empowerment on child nutrition in rural Burkina Faso points to some implications. First, the results indicate that women's empowerment is low, yet it is highly correlated with children's nutritional status. We suggest that agricultural and nutritional programmes targeting women could be implemented at community level to reach most women in order to improve their empowerment. Second, public policies aimed at improving empowerment should be integrated with measures facilitating women's access to land and production decision by updating laws on agricultural land ownership, and inheritance for women. Third, given that access to credit could enable women empowerment, it will be useful that policy ensures easier access to credit for female farmers through microfinance institutions.

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