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Addressing Under-Nutrition in Developing Countries through Nutrition Sensitive Agriculture and Women Empowerment: A Literature Review

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Abstract:

There is an urgent need to tackle malnutrition, a contributor to almost half the deaths of children less than 5 years of age. There is a need for a comprehensive strategy to address this issue, which not only looks at dietary intake and illness management, but also takes into account the other allied interventions in agriculture, women empowerment etc to supplement and strengthen the direct nutrition interventions like food and micronutrient supplementation, health education or illness management. This article examines the different pathways through which agriculture affects nutrition, the role of uncultivated food in providing nutritional security to the vulnerable communities and the importance of women empowerment as an underlying factor in improving nutritional status in a family or community.

Key words: Nutrition, agriculture, uncultivated food, vulnerability, women empowerment

Introduction

An unacceptably high 868 million people worldwide (12.5% of the world's population) are undernourished in terms of energy intake (FAO, 2013). WHO- UNICEF- World Bank estimated in 2011 that globally 101 million children, i.e. 16 % under the age of five years were underweight (weight for age below -2SD), and another 43 million children (7%) to be overweight (weight for age above +2SD). 165 million children (26%) were stunted (height for age below -2SD), and 52 million children (8%) were wasted (weight for height below -2SD)(WHO, 2011).

Nutrition is critical not just for reducing high mortality rates but also for social and economic development. Under-nutrition at an early age undermines not only the physical development of a child but also adversely affects cognitive capacities, lowers school performance, increases chances of school dropout, and future economic prospects. FAO estimates that globally, up to 5% of GDP is lost due to malnutrition (FAO, 2013).

Causes of undernutrition

The state of nutrition or lack of it is determined by a matrix of immediate, underlying and basic causes. (UNICEF 1990). While the immediate causes are inadequate dietary intake and diseases, the underlying causes could be insufficient care for mother and children, inadequate access to food or insufficient heath services and unhealthy environment. Commission on Social Determinants of Health (WHO CSDH, 2010) further states that the status of heath is influenced by structural determinants such as gender, social class, education, income and livelihood, which in turn are determined by socio-economic and political context of the country or region. It is therefore now being increasingly recognised that a more comprehensive approach converging agriculture, livelihood, education,

healthcare and gender empowerment is needed for addressing the situation of malnutrition (Ruel M T, et al. 2013). Hunger and food scarcity is one of the major contributing factors towards malnutrition, and much of the current debates today are around how to make agriculture more nutrition sensitive (Ruel M T et al, 2013, Braun J, 2011, Dorward, 2013).

Agriculture-nutrition linkages

It is difficult to draw a linear relationship between agriculture and nutrition. Different pathways have been postulated by scholars for linking agriculture and nutrition. Haddad L (2013) states that there are three possible pathways, namely, increasing farm production, lowering food prices by improving supply and efficiency of production and through increased intake of nutritious food through own production as possible pathways to positively impact on nutritional status. Dorward (2013) puts forward the argument that while nutrition could be addressed through general development, including technological advancement that improves farm productivity and food availability, gradually market forces take over the consumer preferences, as people shift from agrarian economy and own production to that of food buyers in industrial economy. The importance of agricultural development and own production in improving nutrition is highest in the poorest agrarian communities, and declines with economic development, when people shift from agriculture and rural areas, and food buyers and purchases increase. Hoddinott (2011) further adds that the relationship of agriculture and nutrition is bidirectional and any change in setting, resources or processes of agriculture will have an impact on health and nutrition, and conversely, changes in nutrition or health status will affect agriculture. Chung K (2012) has enumerated five different approaches for addressing under-nutrition through agricultural linkage, namely, trickledown effect of increased

production on increasing consumption at household level; bio-fortification approach, as demonstrated in Orange Flesh Sweet Potato (OFSP) bio-fortification for improving Vitamin A deficiency in Kenya, mass fortification of food items with micronutrients , agriculture based dietary approach and gendered approach that seeks to examine how both men and women are affected by different policies and programmes, and how both genders can be involved as advocates for better health and nutrition outcomes. He concludes that the linkages are indeed complex, calling for a multidisciplinary and multi stakeholder involvement; and that it is important to think beyond a single approach and build a larger framework for intervention.

Increased production in agriculture has helped in improving food security and alleviating protein energy malnutrition. However, very little documentation is available on impact on nutrition for interventions related to value chain approaches, improving market access of small farmers or organization of small farm holders, primarily because improving nutrition has not been a stated objective of such interventions. (Underwood B A, 2000; Dorp M van, 2011) Similarly, different studies have concluded that there is little evidence of any impact of homestead gardening on status of maternal and child nutrition, with the exception of Vitamin A status through an intervention of bio-fortified sweet potatoes. Yet, many of these studies have suffered from insufficient design to measure the impact on nutrition (Masset E, et al. 2011, Ruel M T,et al, 2013). However, irrespective of the differences, the studies have shown that impact of agricultural interventions on nutrition is enhanced by involving and empowering women, particularly, when they have increased control over income, and have knowledge and skills for optimal utilization of household resources. (Ruel MT, et al, 2013).

Vulnerability and resilience

Poor population are also vulnerable to shocks from climate change, fluctuating food prices, man-made shocks like conflicts etc that threaten food security. Global Hunger Index 2013 report has brought the spotlight on need of building resilience in vulnerable communities in face of shocks and stressors, to "*come out of poverty, stay out of poverty and avoid falling into poverty in the first place*." Provisioning of four interventions have been identified as important: improvement in agricultural production and diversification of livelihood for the extremely poor communities, provision of quality health care, nutrition and sanitation services, provision of safe drinking water, strengthening community organizations and women empowerment as essential for building resilience in communities in normal periods, also emphasizing upon a need for strong surveillance for early detection of emergency situations.

Role of Uncultivated foods in food and nutrition security of vulnerable communities

FAO (2012) has laid down guidelines for researches aimed at improving food security and nutritional status in vulnerable communities. It calls for specific nutritional objectives in agricultural programmes and additionally, recognizes the value of traditional and indigenous crops as an important component of food security and diversity in family food basket. It states that there is no real dichotomy of "wild" and "domesticated" food products; rather they exist in a continuum from subsistence foraging to commercial agriculture. It further states that the non-wood forest products, often looked upon as "relics of past" actually could be seen as unexploited opportunities for future use. At present about 80% of total intake for human consumption comes from around 12 species grown worldwide,

with over half the calorie and protein requirements coming from wheat, rice and maize, thus severely restricting the diversity in food basket. On the other hand, uncultivated and wild food provide dietary diversity, they are also a rich source of Vitamin A, B12, riboflavins and other micronutrients. A study in Lao PDR found that wild foods contributed to 40% calcium, 25% of iron and 40% of Vitamin A and C requirements of the community (Foppes and Ketphanh, 2004). Similarly, Mazhar et al (2007) found that wild plants contributed to 65% of the food weight of the very poor landless households and 34% of the food weight of better off households. Sinha and Lakra(2005) estimated that 80% of the forest dwellers in five States of India depend on wild foods for 25-50% of their annual food requirement. The mean use of wild foods have been reported to be around 120 per location among different indigenous communities in both developing and industrialized countries, and country aggregates could reach upto 300-800 species. Uncultivated and wild foods are also more resistant to effects of weather changes, and could help in food security of the poor communities (Bharucha Z and Pretty J). It is widely understood that while wild foods not only contribute to food basket of households, they also have substantial contribution in household incomes through sale of such products (FAO, Aryal K et al, 2013; Bharucha Z and Pretty J).

Women empowerment and nutrition

While FAO talks about maximizing household income, it also stresses on empowering women as the primary caretaker in the household, with increased discretionary income and access to technology and other inputs. It recognizes that any agricultural intervention should not adversely affect the child caring of women through demand on her time, rather such programmes should add a component to enable high quality child care. The guidelines emphasize on participatory learning approaches that

involve the community right from planning to implementation and evaluation of projects, and developing institutional linkages and frameworks that could support these interventions (Herforth A, 2012).

Empowering women is critical for improving nutritional status. Enabling greater control of women in all stages of the agriculture-nutrition chain will create space for reflecting her preferences and priorities. Getting control on income will enable women to place their priorities on nutrition, thereby impacting the outcomes positively (Haddad L, 2013). However, any intervention targeting women must take into account her role and time for child nurturing- additional workload that affects her time for nurturing practices will have adverse effect on the well being of the child (Berti P R et al , 2003).

Economic, environmental and socio-political contexts are the basic factors that determine how the underlying factors play out. Availability of food, for instance, is critical, but this is determined by whether the child or his/her caregiver has physical and economic access to food; has the knowledge of how to use the resource and take proper care of the child. The caregiver's control over resources even within the household and his/her own health status is important determinant in the nutritional outcomes of the child (Benson T and Shekar M, 2006).

Conclusion

In the nutshell, there is a need for an integrated approach to address the issue of malnutrition that will not only include proximate determinants like diet and health care but also take into account other nutrition sensitive interventions from allied sectors. Agriculture has the potential to play a promising role in combating malnutrition, not just by increasing food security through increased productivity, but also by increasing income from agriculture and allied sector, making food more affordable

by increase in productivity and lowering of prices, and offering a wider choice of diverse food groups. However, the factors do not necessarily translate to improved nutritional outcomes, and there may be large inequities in distribution of the benefits within communities as well as within households. Therefore a more comprehensive approach that intervenes at structural level like empowerment particularly of women and of vulnerable communities, education, reducing social inequities and policy level reforms that ensure equitable access to food and health care, ensure healthy environment and provide social security will be needed to make any sustainable impact.

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