

Afghanistan Evidence Review: Agriculture and Nutrition Linkages

This paper draws from the limited sources that are available relating to agriculture and nutrition in Afghanistan. While there are a fair amount of agriculture programs and nutrition programs, currently there is a dearth of empirical evidence on the links (or disconnects) between agriculture and how it affects nutrition outcomes in this country.

1. The nutrition situation and trends

Afghanistan is one of the least developed countries in the world, ranked at 172 out of 187 countries in the 2011 Human Development Index (UNDP 2011). This is not surprising given years of conflict and natural resource degradation. The country has one of the lowest life expectancies in the world, one of the highest under-five mortality rates (not to mention maternal mortality), low levels of education, and among the lowest GNI per capita (UNDP 2011). Approximately 36 percent of the population lives below the poverty line (CSO 2009).

Malnutrition is clearly both a cause and consequence of such low levels of development. It is difficult to establish a trend due to lack of comparable data, but the nutrition snapshots from both 2004 and 2010 are clear: Afghanistan has some of the highest rates of undernutrition in the world. The 2004 National Nutrition Survey (NNS), the only comprehensive national nutrition survey for the country, found the prevalence of stunting among children under five to be 60.5 percent, which was reported by UNICEF to be the highest in the world (UNICEF 2009). The wasting rate among children one to two years was 18.7 percent. The prevalence of both iodine deficiency disorder and iron deficiency among children under five was 72 percent, anemia was found in half of all children 6-24 months, and the prevalence of vitamin A deficiency among children under five was 28 percent. Even Scurvy, the long-forgotten sailor's disease caused by vitamin C deficiency, was found among 10 percent of people in remote, mountainous provinces. The nutrition situation did not improve much by 2010, as shown by table 1, although both infant and under five mortality rates dropped substantially.

Table 1. Child (6-59 months) Malnutrition in Afghanistan

Nutrition Indicator	2004	2010
U5 Mortality rate (per 1000)	257 (2001)	161 (2007-8)
Stunting	60.5%	55%
Wasting	8.7%	18%
Underweight	33.7%	31%
Iodine deficiency	71.9%	72%
Anemia	37.9%	38%
Vitamin A deficiency	28%	--

Sources: MOPH and others 2009; Jan 2012 Draft Nutrition Action Framework

Table 2. Maternal (15-49 years) Malnutrition in Afghanistan

Nutrition Indicator	2004
Mortality rate (per 100,000 births)	1600
Non-pregnant low BMI (<18.5)	20.9%
Iodine Deficiency	>75%
Iron Deficiency, pregnant and not	65.3%, 48.4%
Anemia, pregnant and not	24.7%, 25.7%
Vitamin A deficiency	10-20%

Sources: MOPH and others 2009; Levitt 2011

As mentioned above, poverty is a major concern in Afghanistan. However, undernutrition is caused by more than poverty alone, and therefore economic growth alone is not enough to remedy the problem (Haddad *et al* 2003, Bhutta *et al* 2008). Health status, along with quantity and quality (i.e., nutrient density) of food consumed are the most proximal links to child nutrition status, which, in turn, are influenced by various underlying factors (UNICEF 1990). According to the 2004 NNS, 28 percent of households have inadequate caloric intake while at least a third of households consume a diet with inadequate food diversity. Health services are insufficient and thus there is a high prevalence of illness. Illnesses also go untreated in areas where physical accessibility to health facilities has improved, due to constraints on households such as cost, transportation, or cultural issues. Approximately 73 percent of households lack access to safe drinking water and 95 percent lack access to improved sanitation. Hygiene practices are also a concern, as hand washing with soap is not common (Levitt 2011).

Among the most important determinants of undernutrition is inadequate care for women and children. In Afghanistan, use of prenatal care is low. There are no supplementation programs for women through the health system, although there is a clear need for iron and folic acid supplementation at the very least. Deworming of pregnant women and children is infrequent. Crucial infant and young child feeding (IYCF) practices are sub-optimal. For example, exclusive breastfeeding of children younger than six months is low at just 35 percent and only a third of children are given complementary foods at the proper time of six months. When it comes to women's empowerment, unfortunately women have little influence on how resources are spent and what foods are purchased (Levitt 2011).

2. The agriculture situation and trends

As mentioned, diet quality in terms of nutrients (both macro- and micronutrients) is a major determinant of nutrition status. It is therefore important to consume a diverse diet so as to ensure intake of all essential vitamins and minerals. Most Afghan households consume wheat, oil, and tea, but little meat, fruits, or vegetables. This is a result of limited diversity of food production, limited economic or physical access to diverse foods, especially in remote areas, and lack of awareness regarding the importance of diverse foods. Approximately 80 percent of the population is rural, and depends on agriculture and/or livestock as a main livelihood, even though only 12 percent of the land is arable (Dufour 2012). Productivity is low, and agriculture only accounts for about a third of total GDP (Levitt 2011). The productivity and production gaps no doubt contribute to 31 percent of the population being food insecure (CSO 2009).

Wheat is both a major production crop and the main staple for the people of Afghanistan, accounting for 57 percent of calories consumed by the relatively poor (D'Souza and Jolliffe 2010). Wheat production is highly volatile due to weather and insecurity, and the country is dependent upon imports to meet the shortfalls. Even in 2007, when Afghanistan's cereal harvest was the highest in the past decade, the cereal deficit was approximately 220 metric tons. Pakistan is the major supplier of wheat, comprising 59 – 79 percent of the Afghan wheat market (D'Souza and Jolliffe 2010).

Decades of conflict have negatively impacted natural resources and their management. Rangelands have suffered from repeated droughts and illegal conversion to other land uses. The reduced livestock population has also compromised the availability and affordability of animal-source foods (Levitt 2011). Local biodiversity is also threatened by the loss of local knowledge about these resources, as a result of social changes, population displacement, and urbanization. Further, large-scale commercial agriculture development projects, which solely focused on the promotion of a few selected crops, also contributed to a loss of biodiversity (Dufour 2012).

Extreme deforestation has led to extensive desertification, soil erosion, and dust storms. Farmers are no longer competitive in niche markets for dried fruit, nuts, and industrial crops (such as cotton and sugar beet). However, the export market in mung beans, other pulses, and cumin is growing. Mechanization has expanded, and farmers have improved access to chemical fertilizers in even the remotest of rural markets (Levitt 2011). The overall irrigated land area has declined dramatically in recent decades, with considerable yield consequences.

Opium poppy is a crop that plays a large role in the economy, which is not surprising given the income potential per hectare of poppy is 12 to 30 times higher than that of wheat (Buddenberg and Byrd 2006). Poppy production accounts for only three percent of cultivated land, but the opium economy accounted for more than one-third of estimated total GDP in 2003. Until recently, policies surrounding poppy have been too narrow-minded, focusing only on “mounting insecurity and poppy production, failing to see that the deterioration of natural resources and food and nutrition insecurity were key drivers of conflict, insecurity, and poppy production” (Dufour 2012). However, there are now programs being created to incentivize poppy farmers to substitute to another livelihood (Levitt 2011).

There is a clear connection between malnutrition, food insecurity, and natural resource deterioration in Afghanistan. Charlotte Dufour (2012) states:

The deterioration of the natural resource base is a clear underlying cause of food insecurity, and vice versa, food and nutrition insecurity compel parts of the population to engage in unsustainable exploitation of local resources. Natural resource conservation strategies can also put communities who rely on these natural resources for their livelihoods under increased stress. Thus, there is an inherent tension between short-term food and nutrition security, and sustainable natural resource management. Therefore, food and nutrition security, and biodiversity conservation must be addressed together, building on indigenous knowledge and systems.

Unfortunately, there is no hard data on yearly growth rates in agricultural GDP, nor regarding public investment in agriculture. However, the deteriorated situation makes it clear that in recent decades agriculture has not received the attention it needs.

3. Nutrition-relevant policies, programs and institutional arrangements

Within the main poverty reduction strategy, the Afghanistan National Development Strategy (ANDS), two sector strategies are responsible for addressing undernutrition: the Health and Nutrition Sector Strategy (HNSS) and the Agriculture and Rural Development Sector Strategy (ARDSS). Despite these supportive policy documents, support and funding for nutrition within line ministries remains weak.

The two government departments specifically dedicated to nutrition are the Ministry of Public Health's (MOPH) Public Nutrition Department (PND) and the Ministry of Agriculture, Irrigation, and Livestock's (MAIL) Home Economics Department (HED). A Public Nutrition Policy and Strategy (PNPS) was developed in 2003 with support from Tufts University, but implementation was lacking. USAID supported a revised Public Nutrition Strategy (2009-13) focusing on direct nutrition interventions through the health sector, mentioning links to other sectors supportive of nutrition. The MOPH's Basic Package of Health Services (BPHS) provides many of the interventions recommended by the 2008 *Lancet* series on maternal and child undernutrition, but most of them need significant scale-up. Interventions include (Levitt 2011):

- **Pre-pregnancy and maternal nutrition:**
 - Iron and folic acid supplementation. Prenatal coverage is 36 percent.
 - Postpartum Vitamin A supplements. Coverage is less than 25 percent.
 - Free de-worming. Very low use of services.
 - Provision of insecticide-treated bed nets in malaria-prone areas. Adequate support exists.
- **Infant and young child nutrition:**
 - Vitamin A supplementation through polio immunization campaigns. Coverage is more than 90 percent, however an alternative platform is needed because campaigns may soon be phased out.
 - Promotion of optimal infant and young child feeding (IYCF) practices.
 - A pilot growth promotion program in five provinces.
 - Anemia treatment through an Integrated Management of Child Illness (IMCI) regimen in BPHS facilities.
 - Diarrhea treatment with oral rehydration solution and zinc.
 - Prevention and treatment of acute undernutrition through therapeutic feeding units and supplementary feeding programs.
- **Flour fortification:**
 - Eight large wheat-flour millers in Afghanistan are participating in fortification efforts. Mills receive the fortificant premix (iron, zinc, B12, A, folic acid) through the Micronutrient Initiative (MI). However, they do not reach beyond urban consumers and therefore provide fortified wheat flour to only 8 percent of the urban population.
- **Universal salt iodization and double-fortified salt:**
 - Supported at the highest level by President Hamid Karzai.
 - Twenty-five salt factories fortify salt from domestic sources. Coverage is 50 percent.
 - Fortificants are provided by MI and UNICEF.

- Double fortification with iron as well as iodine will require additional support and is being explored by MI, the MOPH, and UNICEF.
- **Oil and ghee fortification:**
 - Nearly 90 percent of the cooking oil and ghee labeled as vitamin A fortified, but tests show only 10 percent are actually fortified.
 - MI, UNICEF, and the MOPH are exploring legislation to support importation of vitamin A fortified oil and ghee.
- **Multiple micronutrient powders:**
 - Thus far, used in emergency programs only.

Table 3. Other ministries that have important nutrition-related functions

Ministry	Nutrition-related Function
<i>Ministry of Rural Rehabilitation and Development</i>	Food security surveillance (the National Risk and Vulnerability Assessment)
<i>Ministry of Labor, Social Affairs, Martyrs, and Disabled</i>	Implements social protection programs
<i>Ministry of Education</i>	Collaborates with the HED and FAO to promote nutrition through the schools
<i>Ministry of Higher Education</i>	Includes some nutrition topics in the medical curriculum and is exploring options to expand nutrition training
<i>Ministry of Women’s Affairs</i>	Collaborates in nutrition promotion through women’s groups (nutrition education in literacy courses)
<i>Ministry of Commerce</i>	Links with the private sectors, especially in relation to food fortification

Source: Levitt 2011

A new, coordinated effort among five Afghan ministries seeks to address maternal and child undernutrition, with a focus on the 1000 days from conception through the first two years of life. The overall objective of the initiative, called the Multi-Sectoral Nutrition Action Framework (MNAF), is to reduce stunting in children aged 0-24 months by 10 percentage points by the end of 2016. The primary activities of the MNAF fall into the following categories:

Increasing food availability for food insecure families: MAIL

- Food production and dietary diversification
- Food storage and preservation
- Market availability

Improving food access for food insecure families: MRRD, MAIL

- Food transfers
- Food for Work
- Food for Assets
- Poverty alleviation programs
- Community-based income generation programs

Improving the quality of diets: MOPH, MOCI

- Micronutrient supplementation
- Micronutrient fortification

Improving care and feeding practices for infants and young children and self-care for pregnant women and adolescent girls: MOPH, MOE

- IYCF
- Maternal nutrition
- Preventing and treating SAM
- Counseling of adolescent girls
- Priority operations research

Assuring the healthy absorption of nutrients by preventing infection: MRRD, MOPH, MOE

- Establishment and maintenance of community water systems
- Community-led promotion and construction of household latrines
- Counseling on hygiene and sanitation through augmented community health service provision
- De-worming of children and pregnant women
- Full integration of nutrition into activities at health facilities

4. Agriculture policies, programmes and institutional arrangements

As mentioned, the 2002 Afghanistan National Development Strategy includes the Agriculture and Rural Development Sector Strategy (ARDSS), in which food security issues are addressed. The objective of the ARDSS is to enable the farmer to respond to the domestic and international market through better knowledge, tools, and linkages with the market (Pain and Shah 2009). The focus of actions has been on affordable credit, modern inputs, reviving fruit production, research, and land tenure.

MAIL's 2008 National Agriculture Development Framework (NADF) was borne out of a previous "master plan" to guide investment of six development partners collaborating on agriculture development in Afghanistan. The NADF included four programs:

- Natural resource management
- Economic regeneration (quality control and food safety)
- Change management, Public Sector Development, and Program Support Framework
- Agriculture Production and Productivity (APP)

The MAIL website states the objective of the APP:

To sustainably increase the production and productivity of farmers and herders through provision of enhanced inputs, services, and research. The goal is to move Afghanistan closer to self-sufficiency in basic crops, expand production of cash crops to meet domestic and export demands, and improve the supply of animal products for the food and handicrafts industry. The idea is to facilitate and support the process of getting more farmers from subsistence farming into semi-specialized and/or semi-intensive market-based production systems while maintaining diversification for risk reduction and food security.

As part of the NADF, FAO engaged in an institutional capacity building and nutrition mainstreaming project with the MAIL's HED. From 2003 to 2010 the "Supporting Food Security, Nutrition and Livelihoods in Afghanistan" project was implemented with funding from the German government. The project worked across sectors and operated at the central, provincial, and community level. Box 1 gives the principles that FAO has used to guide its capacity building work on agriculture and nutrition in Afghanistan. Out of this came two other projects on biodiversity conservation and participatory forestry (Dufour 2012). Specific nutrition outcomes as a result of these initiatives are unknown.

FAO's principles for making agriculture "nutrition-sensitive" in Afghanistan:

- Policies and programmes should be defined on the basis of an understanding of who is malnourished and why. This not only requires adequate quantitative data, but even more importantly, participatory causal analyses of malnutrition at the local level.
- Nutrition objectives should be incorporated into national policies and programmes, and specific indicators used to measure their achievement, especially concerning improvements in diets.
- Interventions must be targeted to families most at risk of malnutrition, and adapted to their livelihoods.
- Agricultural programmes must be designed to increase access to diverse, safe and nutritious foods.
- Nutrition education must be part of food security interventions.
- Agricultural policies and programmes must be designed to involve and support both women and men.
- Agricultural policies and programmes must be integrated with sectoral interventions designed to address malnutrition, as part of a coordinated nutrition strategy.

Source: Dufour 2012

Agriculture and health sector stakeholders initiated a Joint Program on Children, Food Security, and Nutrition in Afghanistan in 2009 with partial funding from the Spanish Millennium Development Goals Trust Fund. The goal is to contribute to reducing undernutrition through sustainable and multisectoral efforts at all levels. Two outcomes, one a package of community-level nutrition and food security interventions, the other focusing on strengthening policy frameworks and institutions, aim to contribute to both short term and long term reductions in undernutrition (Levitt 2011).

Within the newly-developed Multi-Sectoral Nutrition Action Framework, mentioned in section 3, the planned activities related to agriculture (MAIL has primary responsibility) are as follows:

Food Production and Dietary Diversification

- Intensified and subsidized provision of agricultural inputs to small farms
- Garden production for household consumption, and garden-based learning in schools
- Increased agricultural employment generation
- Improved agricultural extension capacity with increased focus on dietary diversification and nutrition
- Backyard poultry and small ruminant production

- Expansion of nutrition-sensitive agricultural research

Food Storage and Preservation

- Strengthening of household and community food storage capacity to reduce post-harvest losses and increase consumption of nutrient-rich foods throughout the year

Market Availability

- Improved information on markets to producers

Currently, Afghanistan has several agriculture programs that could have a nutritional effect, but these programs are operating at a limited scale (Levitt 2011):

HLP (World Bank-funded Horticulture and Livestock Project) Backyard Poultry Project: a three-year \$5 million poultry project in ten provinces. The objectives are to improve household nutrition and economic status. Data from 2003 show that Afghanistan imports \$29 million of eggs per year and \$90 million of chicken. In total the program is targeting 100,000 women, but is in the process of scaling up coverage. The project currently has no direct nutrition promotion component, but culturally appropriate nutrition promotion messages have been identified. Advocacy and technical support are needed for inclusion of nutrition indicators in this project.

HLP Integrated Dairy Schemes Project:

Building on several earlier dairy programs, this program targets women and is designed around local dairy cooperatives to improve household food security and income. Opportunities exist for nutrition through the dairy project. Dairy products and beef have the potential to provide significant sources of nutrients for households. Culturally appropriate nutrition promotion messages have been identified. Advocacy and technical support are needed for inclusion of nutrition indicators in this project.

Project promoting improved household-level food processing, preservation, and storage:

The HED is scaling up a project to promote nutrition in vulnerable rural households in the context of education about food processing, preservation, and storage. The project helps address the gap in food security during winter months by providing nutritious foods during the vulnerable season as well as a source of additional income. Foods preserved or sold include jams, juice, pickled vegetables, tomato paste, ketchup, and vinegar. The HED's budget limits its activities to 5 provinces. This program provides a scalable platform for reaching vulnerable women with nutrition promotion messages. Various studies have shown that approaches emphasizing home production of nutrient-rich foods do not result in significant nutritional improvements unless they are complemented by nutrition promotion activities (Brun, Reynaud, and Chevassus-Agnes 1989; English and Badcock 1998; Kennedy and Alderman 1987; Marsh 1998).

School-Based Nutrition Program:

Teachers are trained in key nutrition messages linked with a school garden. Teachers instruct students how to plant and care for the garden and how to harvest, process, and consume different types of vegetables and legumes. This project is implemented in collaboration with the Ministry of Education,

the MOPH, and the Ministry of Youth Affairs. Scale-up is being explored, as well as ways to incorporate key nutrition messages to both girls and boys.

Other relevant agriculture activities include projects by the European Union, USAID, and World Bank to improve perennial horticulture development, natural resource management, and commercial agriculture development. Also, many NGOs are engaged in integrated agricultural development at the community level. The Ministry of Energy and Water implements large-scale irrigation projects that affect food production and food security. The impact these projects have on nutrition in Afghanistan, and via which pathways, demand further investigation.

5. Evidence of links (or disconnects) between agriculture and nutrition

This section seeks to identify and analyze evidence on linkages between agriculture and nutrition in Afghanistan by making use of a conceptual framework developed by Gillespie, Harris, and Kadiyala (2012) for the Tackling the Agriculture-Nutrition Disconnect in India (TANDI) initiative, which delineates seven key pathways between agriculture and nutrition:

1. Agriculture as a *source of food*, the most direct pathway by which household agricultural production translates into consumption (via crops cultivated by the household)
2. Agriculture as a *source of income*, either through wages earned by agricultural workers or through the marketed sales of food produced
3. The link between agricultural policy and *food prices*, involving a range of supply-and-demand factors that affect the prices of various marketed food and nonfood crops, which, in turn, affect the incomes of net sellers and the ability to ensure household food security (including diet quality) of net buyers
4. Income derived from agriculture and *how it is actually spent*, especially the degree to which nonfood expenditures are allocated to nutrition-relevant activities (for example, expenditures for health, education, and social welfare)
5. Women's *socioeconomic status* and their ability to influence household decision making and intra-household allocations of food, health, and care
6. Women's *ability to manage* the care, feeding, and health of young children while participating in agricultural activities
7. Women's *own nutritional status*, when their work-related energy expenditure exceeds their intakes, their dietary diversity is compromised, or their agricultural practices are hazardous to their health (which, in turn, may impact their nutritional status)

Pathway 1: Agriculture for Food

Only 12 percent of the land in Afghanistan is arable, therefore many households are not able to cultivate crops. As mentioned, there are many man-made and natural causes behind declining food production in recent decades. As a result, 28 percent of Afghan households have inadequate caloric intake. Only 11

percent of households have garden plots, growing fruits, nuts, and vegetables both for income and consumption. Most households owning garden plots have less than half a hectare of land. (NRVA 2007)

One of the activities that MAIL aims to focus on within the NADF is garden production of nutrient-dense foods for household consumption, and garden-based learning in schools. Other activities include improved agricultural extension capacity with increased focus on dietary diversification and nutrition, as well as an expansion of nutrition-sensitive agricultural research. Additionally, MAIL will attempt to strengthen household and community food storage capacity to reduce post-harvest losses and increase consumption of nutrient-rich foods throughout the year.

Pathway 2: Agriculture for Income

Agriculture is by far the most important economic activity and livelihood component in Afghanistan. Approximately 55 percent of households are engaged in farming and 68 percent have livestock (NRVA 2007). Around 47 percent of the population depends on agriculture as a source of income, while 23 percent depend on livestock as a source of income (NRVA 2005).

The NADF will focus on increasing agricultural employment and intensifying and subsidizing provision of agricultural inputs to small farms. The key will be to have monitoring systems in place and evaluate the impact on income of these activities.

Pathway 3: Agriculture and Food Prices

During the 2007/2008 global food price crisis, Afghanistan experienced a sharp increase in staple food prices, especially that of wheat, the main staple of the Afghan diet. Using nationally-representative data (NRVA 2007/2008) before and after the crisis, D'Souza and Jolliffe (2010) show the causes of the price increases in Afghanistan as well as the effects on household wellbeing and food security.

During the period of rapid increases in international prices of food commodities in 2007 and 2008, Afghanistan suffered a drought causing the 2008 wheat harvest to be the worst since 2000. The price impact of the shortfall of wheat production was magnified by export bans in Pakistan. Between the fall of 2007 and summer of 2008, the prices of domestic wheat and wheat flour increased by over 100 percent.

From August 2007 to September 2008 real food consumption declined approximately 33 percent, with the impact on urban areas double that of rural areas. This is most likely because urban consumption had farther to fall and most urban households are net buyers while many rural households are agriculturalists and thus net sellers. The price increases were associated with decreases in dietary diversity and a movement towards staple foods, that is, trading off quality of calories for quantity of calories. For example, for a one percent increase in price, a 0.25 percent decline in grams of protein consumed per person per day was observed. Yet even with consumption patterns changing to maintain

overall calories, the percentage of households consuming less than 2100 calories per person per day rose from 24 percent to 34 percent (D'Souza and Jolliffe 2010).

Most notably, in urban areas, the increases in the price of wheat flour actually increased the demand for wheat products, illustrating the economic paradox of a Giffen good. In the case of a Giffen good, the good is inferior (in economic terms) and the income effect dominates the substitution effect. Thus, the reduction in real income dominated the price increase of wheat products, and households increased their consumption of wheat products. Simply expressed, even though the price of wheat flour doubled, it is still a much cheaper way to obtain calories than from sources such as meat.

A decline in dietary diversity decreases diet quality and is linked with inadequate nutrient intake, which in turn leads to various manifestations of undernutrition. Even short-term micronutrient and protein intake deficiencies can have long-term repercussions for infants and young children.

Pathway 4: Non-Food Expenditure of Agricultural Income

There is a lack of research on this pathway. Data is needed on how income derived from agriculture is spent on crucial development inputs such as health, education, and social welfare.

Pathway 5: Female Agricultural Labor and Power

Women's status and empowerment in Afghanistan is particularly poor. They have virtually no intra-household decision-making ability. This is especially true when it comes to food purchases and health spending (NRVA 2007). The husband or father of the house controls the large majority of household spending situations. Even for the few women who generate income themselves, only 20 percent decide on spending freely.

Pathway 6: Female Agricultural Labor and Childcare and Feeding

Women and girls engage in a number of farm-based activities ranging from seed bed preparation, weeding, horticulture, and fruit cultivation to a series of post-harvest crop processing activities such as cleaning and drying vegetables, fruits, and nuts for domestic use and for marketing. Further, women in poorer households tend to participate in agricultural tasks outside the home more so than women in wealthier households (World Bank 2005). Therefore, one would expect women in poorer households to have less time to manage the care, feeding, and health of their young children. This would be one of the many reasons that children in poorer households are generally more undernourished than those in richer households. More empirical research is needed on this pathway connecting agriculture to nutrition.

Pathway 7: Female Agricultural Labor and Women’s Nutritional Status

There is a lack of research on this pathway.

6. Capacities, opportunities and challenges in leveraging agriculture for nutrition

There is a lack of investigation on the impact of agriculture projects in Afghanistan on nutrition indicators. Key agriculture – nutrition pathways need exploring, such as those relating to agricultural income, food purchases, diet composition or diet change, micronutrient intake, and nutrition status.

Although much capacity building has been done, the government of Afghanistan has failed to put in place sufficient resources and build up sufficient institutions to address nutrition and agriculture. Afghan ministries working on agriculture and nutrition depend, technically and financially, on a range of partners: Canadian International Development Agency (CIDA), European Commission, GAIN, FAO, MI, MDG Fund, UNICEF, USAID, World Bank, WFP, WHO.

The MAIL currently lacks sufficient human resources to provide the inputs into the Nutrition Action Framework. It is estimated that the number of agriculture extension officers would need to grow from 800 to at least 3000, and the number of Home Economic Officers would need to double by 2015. There is a comprehensive nation-wide capacity development initiative, the National Institution Building Project (NIBP), which will seek to enhance MAIL’s capacity at the institutional, organizational and individual levels aiming to improve service delivery and resources utilization. The project “Strengthening the Capacity of MAIL and its Partners for Integrated Food and Livelihoods Programming” is funded by the German Bilateral Trust Fund and supports capacity building measures focusing on senior management.

REFERENCES

Bhutta ZA, Ahmed T, Black RE, Cousens S, Dewey K, Giugliani E, Haider BA, Kirkwood B, Morris SS, Sachdev HPS, *et al.*: What works? Interventions for maternal and child undernutrition and survival. *The Lancet* 2008, 371(9610):417-440.

Brun, Thierry, Jacqueline Reynaud, and Simon Chevassus-Agnes. 1989. "Food and Nutritional Impact of One Home Garden Project in Senegal." *Ecology of Food and Nutrition* 23(2): 91–108.

Buddenberg, Doris, and William Byrd. 2006. "Afghanistan's Drug Industry: Structure, Functioning, Dynamics, and Implications for Counter-Narcotics Policy." The World Bank. United Nations Office on Drugs and Crime.

CSO (Central Statistics Office). 2009. *National Risk and Vulnerability Assessment 2007/08: A Profile of Afghanistan*. Kabul: Ministry of Rural Rehabilitation and Development.

D'Souza, Anna, and Dean Jolliffe. 2010. "Rising Food Prices and Coping Strategies: Household-level Evidence from Afghanistan." Policy Research Working Paper 5466. The World Bank.

Dufour, Charlotte. 2012. "Case Study 17: Mainstreaming Nutrition and Biodiversity in Afghanistan's agricultural policies." Unpublished.

English, Ruth, and Jacqui Badcock. 1998. "A Community Nutrition Project in Viet Nam: Effects on Child Morbidity." *Food, Nutrition, and Agriculture* 22: 15–22.

Gillespie, Stuart, Jody Harris, and Suneetha Kadiyala. 2012. "The Agriculture-Nutrition Disconnect in India: What Do We Know?" International Food Policy Research Institute. Unpublished.

Haddad, L., H. Alderman, S. Appleton, L. Song, and Y. Yohannes. 2003. Reducing child malnutrition: How far does income growth take us? *World Bank Economic Review* 17: 107–131.

Kennedy, Eileen T., and Harold Alderman. 1987. *Comparative Analyses of Nutritional Effectiveness of Food Subsidies and Other Food-Related Interventions*. Washington, DC: International Food Policy Research Institute.

MOPH (Ministry of Public Health), UNICEF (United Nations Children's Fund), CDC (Centers for Disease Control and Prevention), National Institute for Research on Food and Nutrition–Italy, and Tufts University. 2009. *2004Afghanistan National Nutrition Survey*. Atlanta: CDC.

Nutrition Action Framework. Jan 2012. Unpublished draft.

Pain, Adam, and Sayed Mohammad Shah. 2009. "Policymaking in Agriculture and Rural Development in Afghanistan." Afghanistan Research and Evaluation Unit. Case Study Series.

UNDP. 2011. Human Development Report. "Sustainability and Equity: A Better Future for All."

UNICEF. 1990. "Strategy for Improved Nutrition of Children and Women in Developing Countries."

UNICEF. 2009. "Tracking Progress on Child and Maternal Nutrition: a survival and development priority."

The World Bank. 2005. Afghanistan: National Reconstruction and Poverty Reduction – the role of Women in Afghanistan's Future.