FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Integrating Gender and Nutrition within Agricultural Extension Services

NEPAL

Landscape Analysis

Working document

November 2015

USAID
FROM THE AMERICAN PEOPLE

INGENAES
Integrating Gender and Nutrition within Agricultural Extension Services

© INGENAES
This work is licensed under a Creative Commons Attribution 3.0 Unported License.

Users are free:

- To share — to copy, distribute and transmit the work. (without participant contact information)
- To remix — to adapt the work.

Under the following conditions:

- Attribution — users must attribute the work to the authors but not in any way that suggests that the authors endorse the user or the user's use of the work.

Technical editing and production by Bhawna Thapa, Nargiza Ludgate, and Katy Heinz.

This report was produced as part of the United States Agency for International Development (USAID) and US Government Feed the Future project "Integrating Gender and Nutrition within Extension and Advisory Services" (INGENAES).
www.ingenaes.illinois.edu

Leader with Associates Cooperative Agreement No. AID-OAA-LA-14-00008.

The report was made possible by the generous support of the American people through USAID. The contents are the responsibility of the authors and do not necessarily reflect the views of USAID or the United States government.

NEPAL
Landscape Analysis

Working document

First Edition published on November 15, 2015

Prepared by

Bhawna Thapa, University of Florida

Cover photo by Bhawna Thapa, 2014

Acronyms

ADB	Agricultural Development Bank, Asian Development Bank
AICC	Agricultural Information and Communication Center
AEP	Agricultural Extension Project (Agricultural Extension Support Activity)
AES	Agricultural Extension System
AIC	Agricultural Input Corporation
AICP	Avian Influenza Control Project (AICP
APP	Agricultural Perspective Plan
APROSC	Agricultural Project Service Centre
CADP	Commercial Agricultural Development Project
CDCS	Country Development Cooperation Strategy
CEPREAD	Center for Environmental and Agricultural Policy Research, Extension and Development
CGIAR	Consultative Group for International Agricultural Research
CIA	Central Intelligence Agency, USA
CIMMYT	Centro Internacional de Mejoramiento de Maïs y Trigo/ International Maize and Wheat Improvement Center
CBS	Central Bureau of Statistics
CIP	Centro Internacional de la Papa/International Potato Center
CLDP	Community Livestock Development Project
CMIASP	Community Managed Irrigated Agriculture Sector Project
CP	Cultural Practice, LLC
CRSP	Collaborative Research Support Program
CSISA	Cereals System Initiative for South Asia
CTEVT	Council for Technical Education and Vocational Training
DAE	Department of Agricultural Extension
DFID	Department for International Development
DoA	Department of Agriculture
DoC	Department of Cooperatives
DoI	Department of Irrigation
DFTQC	Department of Food Technology and Quality Control
DLS	Department of Livestock Services
EAS	Extension and Advisory Services
EIG	Education for Income Generation

FHI	Family Health International
FORWARD	Forum for Rural Welfare and Agricultural Reform for Development
GCC	Global Climate Change
GHI	Global Health Initiative
GoN	Government of Nepal
HDI	Human Development Index
HICAST	Himalayan College of Agricultural Science and Technology
HKI	Helen Keller International
IAAS	Institute of Agriculture and Animal Science
ICT	Information and Communication Technologies
IDA	International Development Agency
iDE	International Development Enterprises
IOE	Independent Office of Evaluation
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
ILO	International Labor Organization
INGENAES	Integrating Gender and Nutrition within Agricultural Extension Services
INGO	International Non-Government Organization
INP	Integrated Nutrition Program
IWRMP	Irrigation and Water Resource Development Project
LARC	Lumle Agricultural Research Center
LFL	Leasehold Forestry-Livestock
MEDP	Micro-Enterprise Development Program
MoAC	Ministry of Agriculture and Co-operatives
MoAD	Ministry of Agricultural Development
MoFALD	Ministry Of Federal Affairs and Local Development
MoHP	Ministry of Health and Population
MoI	Ministry of Irrigation
NARC	Nepal Agricultural Research Council
NARDF	Nepal Agricultural Research and Development Fund
NARSC	National Agricultural Research and Services Centre
NDHS	Nepal Demographic and Health Survey
NDRI	Nepal Development Research Institute

NEAT	Nepal Economic, Agriculture, and Trade
NFRP	Nepal Flood Recovery Program
NGO	Non-Governmental Organization
NLSS	National Living Standards Survey
NPC	National Planning Commission
NPNL	Non-pregnant, non-lactating
PACT	Project for Agricultural commercialization and Trade
PARC	Pakhribas Agricultural Research Center
RDC	Rural Development Center
REDC	Rural Environment Development Center
RIMS-Nepal	Resource Identification and Management Society Nepal
RRN	Rural Reconstruction Nepal
SFDP	Small Farmers' Development Program
SPRING	Strengthening Partnerships, Results, and Innovation in Nutrition Globally
SSNP	Social Safety Net Project
UCD	University of California-Davis
UF	University of Florida
UIUC	University of Illinois at Urbana-Champaign
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WEA	Women's Empowerment Activity
WEAI	Women's Empowerment in Agriculture Index
WFP	World Food Programme
WHO	World Health Organization
WUA	Water Users Association

Contents

Acronyms 4
Introduction 8
1. Country Background 9
1.1 Agriculture sector in Nepal 11
1.1.1 Gender roles in the Agriculture sector 12
1.2 Nutrition issues in Nepal 13
1.2.1 Gender roles in the Nutrition sector 15
2. Agricultural Extension System (AES) Institutional Framework 16
3. Feed the Future Multi-Year Strategy, Nepal 21
4. USAID's Country Development Cooperation Strategy (CDCS), Nepal 31
5. Conclusions 32
ANNEX A: List of References 33
ANNEX B: List of Figures 38
ANNEX C: Maps of Nepal 42
ANNEX D: INGO Projects with the Ministry of Agriculture and Cooperatives 45
ANNEX E: NGOs Providing Agricultural Extension and Service in Proposed Feed the Future Districts 48

Introduction

The Integrating Gender and Nutrition within Agricultural Extension Services (INGENAES) project is funded through the Bureau for Food Security (BFS) of the United States Agency for International Development (USAID) to support the Presidential Feed the Future Initiative, which strives to increase agricultural productivity and the incomes of both men and women in rural areas who rely on agriculture for their livelihoods.

This landscape study provides an overview of Nepal's agriculture and the status of the country's extension system. It also provides information on the prevalence of poverty, nutrition and gender related issues in the country with special focus on rural areas. It summarizes Nepal's current agricultural and nutrition policy and details the strategic goals and objectives of USAID and other donors in the country. This report provides a summary of on-going projects by the USG and other donors in the country related to agriculture extension, and gender and nutrition impacts.

INGENAES supports the development of improved extension and advisory systems (EAS) to reduce gender gaps in agricultural extension services, increase empowerment of women farmers, and improve gender and nutrition integration within extension services by directly or indirectly assisting multiple types of stakeholders within a country, such as farmers, producer groups, cooperatives, policy makers, technical specialists, development NGO practitioners, and donors.

INGENAES efforts will strengthen the capacity of key stakeholders and providing the fora and networks for them to coordinate and reach agreement on policies and strategies to implement improved EAS that better meet the needs of men and women farmers. While INGENAES project will not directly monitor beneficiary impact, it will focus on changes in institutions that directly impact men and women who access agricultural information, training, technologies and nutrition information. Improved services empower women and engage men.

INGENAES will strengthen institutions by identifying their needs and strengthening their capacity to effectively integrate gender and nutrition sensitive information and activities into agricultural extension systems with the aim to promote gender equality, improved household nutrition, and increased women incomes and, subsequently, household food security. Based on the identification of four main gaps in extension services in terms of gender and nutrition integration, INGENAES activities can be divided into the following action areas:

- Build more robust, gender-responsive, and nutrition-sensitive institutions, projects, and programs capable of assessing and responding to the needs of both men and women farmers through extension advisory services (EAS);
- Identify and scale proven mechanisms for delivering improved EAS to women farmers;
- Disseminate technologies that improve women's agricultural productivity and increase household nutrition; and,
- Apply effective, nutrition sensitive, extension approaches and tools for engaging both men and women.

Indicative activities of the INGENAES project include: learning exchanges, assessments, curricula development, training into action, mentoring relationships, internship experiences, and networks that focus on identifying gender-responsive and nutrition-sensitive innovations that can be promoted by EAS organizations, and adopted by men and women farmers. Developing these outputs collaboratively with agricultural extension experts and other partners will transform extension-relevant institutions working directly with men and women farmers.

In each country INGENAES needs to examine the relationships, identify the key change actors, build their capacity, and provide them the incentives to make changes (e.g., set new policies, employ new management practices, modify organizational structures, make changes in practice, adopt innovations). The key actors will vary from country to country, although policy makers, the Ministries of Agriculture and Health, NGOs and the private sector, and of course, women farmers, are likely to be involved in most countries. Key actors will be identified as part of the needs and scoping assessments. Thus, and in preparation of country level activities, the consortium gathers information and key contacts to develop a landscape study of the agricultural sector in that country, a simple description of the pluralistic extension system, nutrition related initiatives, and gender issues. As such, the landscape study is intended as a preparatory tool and handy reference document for work in country. Each landscape study will be updated periodically as INGENAES continues to engage in that country and identifies new key contacts, organizations, and initiatives.

1. Country Background

Nepal, landlocked between India and China in South Asia, is one of the poorest countries in the world. However, partly due to rapid growth in remittances inflows, National Living Standards Survey (NLSS) reveals that the poverty rate has fallen from 42% in 1995/96 to 25% in 2010/11 (International Labor Organization (ILO) 2014)[1]. Nepal ranks 145th out of 187 countries on the Human Development Index (HDI; United Nations Development Programme (UNDP) HDI 2014)[2], and continues to struggle to overcome the socio-economic development challenges of a decade-long Maoist insurgency that ended in 2006. With an area of about 54,363 square miles (Central Bureau of Statistics (CBS) 2011)[3], it is only slightly larger than the state of Arkansas. Nepal's population was estimated to be 30.98 million in 2014 (US Central Intelligence Agency (CIA) World Factbook 2015)[4] (see Map 1 in Annex C) with more than 80 percent living in rural areas and more than 70 percent employed in the agriculture sector (USAID 2015)[5].

Geographically, Nepal can be divided into three main regions (see Table 1, and Map 2 in Annex C): The Terai region to the South, the Hill region in the middle, and the Himalayan Mountain region to the North. According to the Food Security Atlas of Nepal, produced jointly by the United Nations (UN) World Food Programme (WFP) and the Nepal Development Research Institute (NDRI), the Terai covers 17% of the total land area with 48% of the country's population and 56% of total cultivated land. The Hill Region has about 44% of the total population and 37% of cultivated land while the Mountain Region has about 7% of the total population and only 7% of cultivated land (WFP and NDRI 2010). The level of poverty, development, and agriculture involvement varies across these geographical regions. For example, a higher level of poverty is found in the rural mountain areas, especially in the Mid-West and Far-West regions. This is because these remote regions lack basic infrastructure and amenities and the population is mainly self-employed in subsistence agriculture with little cultivable land (DFID 2013).

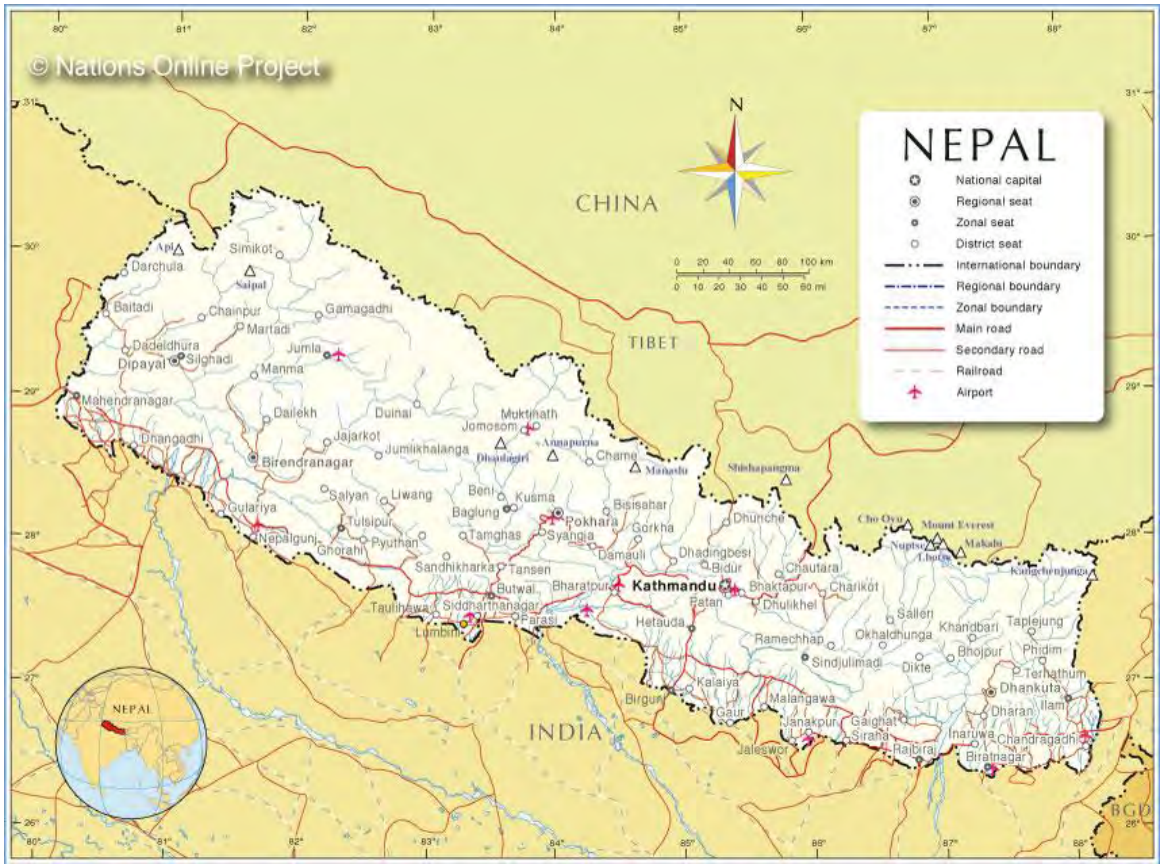
[1]Poverty line provides a level of expenditure required by an individual to fulfill basic needs of both food and non-food items

[2] http://hdr.undp.org/en/countries/profiles/NPL

[3] http://2001-2009.state.gov/g/drl/rls/irf/2008/108504.htm

[4] https://www.cia.gov/library/publications/the-world-factbook/geos/np.html

[5] http://www.usaid.gov/nepal/agriculture-and-food-security



Map: www.nationsonline.org

Table 1: Agricultural Production in the Agro-ecological Domains of Nepal

Agro-ecological domain	**Altitude (meters)**	**Local names for the region**	**Agricultural importance (% of total cultivated land)**	**Population cover**
1. Terai, and river basin	80–600	Terai, Tar, Bensi, Phant, Khonch, Kachad	Most important (56% of total cultivated land)	48.40%
2. Hills			(37% of total cultivated land)	44.30%
2.1 Low hills	600–1,000	TalloPahad	Third most important	
2.2 Middle hills	1,000– 1,600	Deurali, Hatiya, Madhya Pahad	Second most important	
2.3 High hills	1,600– 2,300	Lekh, Kharka	Fourth most important	
3. Mountains	>2,300	Himal	Least important (7% of total cultivated land)	7.30%

Data Source: Vaidya and Floyd, 1997; WFP and NDRI, 2010.

1.1 Agriculture sector in Nepal

Agriculture is one of the dominant economic sectors, accounting for 35% of the country's gross domestic product (GDP) and 13% of the total foreign trade of the country in year 2013/14 (CBS 2014). According to the Independent Office of Evaluation/International Fund for Agricultural Development (IOE/IFAD) 2013 report, cereals contribute about 46% of agricultural GDP, livestock 24%, vegetables, fruits and spices 24%, and forestry about 6%. Although agriculture is the largest source of livelihood, with more than half the working population employed in this sector, the total household income from this sector has been gradually declining in recent years. The share of farm income in total household income decreased from 61% in the 1990s to 28% in 2010/11 (Figure 1, Annex B)[6], and currently stands at 32.6% of total economic output (CBS 2014). Non-farm activities are mostly in the trade sector in the urban Terai region and manufacturing sector in the rural areas. As shown in Figure 2, value-added growth in agriculture increased to an annual average growth of 3.5% in the 1980s, declined to 2.5% in the 1990s, presumably due to the civil unrest at the time, and then gradually began to improve since the 2000s. Therefore, improvement in the agriculture sector, through technological development, holds high potential to have relatively wider impact on poverty reduction and food security in the nation.

Agriculture production in Nepal is primarily rainfed, subsistence focused, with labor-intensive traditional methods of farming. Summary agriculture statistics of the three major crops (rice, wheat and maize) across the agro-ecological zones are illustrated in Figure 3. Rice, the dominant cereal crop, accounts for 35% of total cultivated area and 46% of cereal area (Ministry of Agriculture and Co-operatives (MoAC) 2009), followed by maize (about 20%) and wheat (about 17%) (Karkee 2008). Other cereal crops produced for subsistence include millet, barley and buckwheat (Figure 4). The contrasting climatic zones across the three major geographical regions (Terai, Hills and Mountain region) define the types of crops grown. The sub-tropical lowlands of Terai is the most agriculturally productive region where rice is the main crop, but wheat, maize, barley and oilseeds are also grown. The Hill region, with both subtropical climate in the lowlands and temperate climate in the highlands, favors rice and maize in summer, with wheat, barley and vegetables in winter. In the sparsely populated colder mountain regions, potatoes, barley and buckwheat are grown in the summer months (Sharma 1999).

In recent years, agriculture has intensified to meet the increased demand for food, mainly through the promotion of cash crops, like potatoes, tomatoes, mustard and garlic (Brown and Shrestha 2000), as well as high value horticulture crops, like mango, pineapple and banana (Food and Agriculture Organization (FAO) 1997)[7]. The increased demand for food is mainly in response to increasing population and the need to improve farm income. This gradual shift from subsistence cereal farming agricultural system to an intensive vegetable-based farming system have improved farm income and food security mainly among poor households in the mid-Hills region of Nepal (Raut et al 2010). However, increasing intensification of agriculture on limited available arable land has led to increasing dependence on chemical fertilizer, pesticide and micro-nutrient additions (Gharti et al 2014, Raut et al 2010).

Agricultural GDP growth, yields for major crops and labor productivity, all reveal that there has been little change in the productivity of the agriculture sector in the overall economy (Basnett and Pandey 2014). Nearly two-thirds of agricultural GDP is contributed by cereal crops, which account for over 75% of annual cropped area (Prasad et al 2011, Karkee 2008). However, the yields from these crops have not been enough to attain overall food security in Nepal. Population growth, rapid urbanization, and changing

[6] List of figures can be found in the Annex B

[7] List of horticulture crops grown in Nepal found here: http://www.fao.org/docrep/004/ab985e/ab985e09.htm and http://www.moad.gov.np/downloadfile/yearbook2012_1363677455.pdf

consumption patterns are increasing demand for food. Challenges include poverty, gender inequity, inequitable intrahousehold distribution (Gittelsohn 1991) seasonal fluctuations in yields, limited arable land, and limited access to improved seeds, fertilizer, new technologies, and market opportunities (Joshi et al 2012, USAID 2015, Prasad et al 2011).

1.1.1 Gender roles in the Agriculture sector

Review of the literature on linkages between agriculture, gender roles, and improved health and nutrition outcomes suggests these linkages are dynamic and multifaceted (Gillespie 2001; Headey 2012; Hoddinott 2011). These studies indicate agriculture as a direct and indirect (via income) source of food at the household level, and that the sector is an entry-point for enhancing women's control over resources, knowledge and status (Webb 2013). Despite Nepal's highest livestock population per capita and per unit of cultivated land among Asian countries (Shrestha 1992; Shakya 2004; MoAC 2005), women's participation in livestock programs is very low (Singh et al 2002). Gender blind trainers, teaching materials, seasons and time for the trainings are some of the reasons for low participation rate of women (Paudel et al 2009). As in many low-income countries, the role of male and female farmers in Nepal's agriculture sector is determined not only by gender-specific constraints such as land, labor and access to inputs (i.e. fertilizer, seeds, machinery and credit) and extension services, but also by socio-cultural discriminations (i.e. wealth and caste or ethnicity disparities) and government policies (i.e. ownership laws and property rights).

Studies have shown how the gender and caste division of labor in Nepal have been historically linked with practices of social hierarchy and land distribution (Cameron 1995, Allendorf 2007, Thapa 2009). Furthermore, involvement of women in agricultural activities varies by socio-cultural parameters such as caste and wealth, and also across the geographical regions. For example, highest involvement is observed in the small and marginal households of the Hill and Mountain regions, while women among high caste groups in the Terai region are the least involved (FAO 2010). Women farmers are generally more involved in "land preparation" activities such as removal of vegetation and crop residues while men plough and irrigate the lands (Allendorf 2007, Raut et al 2013). Women tend to be more involved in labor-intensive work such as seed selection, planting and weeding (Thapa 2004). Upadhyay (2005) found that women had a high preference for allocating their time and labor (90% of their labor time) in growing vegetables such cauliflower, tomatoes, cabbage, cucumbers, bitter gourds, bottle gourds and beans, both for household consumption and as cash crops. However, this type of vegetable production commonly referred to as "kitchen gardens" or "homestead food production" are rarely documented in official production statistics (Rocheleau and Edmunds 1997). In addition, women have limited access to land ownership and other household assets that may limit investment decisions and innovations in the agricultural sector (Thapa 2009). Other constraints include labor and time due to their triple role[8], and less access to credit and extension services (FAO 2011a).

Nepal is a traditional patriarchal society where women have limited decision-making power in the household (World Health Organization (WHO) 2009), and men generally have the responsibility of providing for their family. However, in the last few decades, Nepal has been undergoing "feminization" in the agriculture sector (Allendorf 2007, Gartaula et al. 2010, Kollmair 2011). The overall decline in the proportion of labor force and high involvement rate of women is caused by the change in the share of the male workers. Men have been steadily migrating to urban areas and abroad in search of improved employment opportunities (Cameron 1995, FAO 2010). This trend results in an increased role for women in the agriculture labor force. According to the census data by CBS, although the proportion of labor force

[8] According to the International Labor Organization (ILO), gender planning recognizes that in most low-income societies, women have a triple role of reproductive, productive, and community managing activities.

in the agriculture sector fell from 76% in 1998/99 to 74% in 2008, women workers occupied a majority 84% of that share (CBS 2011). This trend also indicated that Nepal had the highest female labor force participation rate in South Asia (ILO 2014) (see Figure 5).

This trend of the feminization of agriculture has implications for agricultural productivity and household food security (Kelker 2009, Tamang et al 2014). With the additional burden of productive and reproductive work, women are constrained with their time, energy and resources. As women take on additional responsibilities of managing household, agricultural production and marketing (Gartaula et al 2010), the ongoing lack of legal ownership of land and restricted access to agriculture resources (FAO 2010) has contributed to declining agriculture production (CBS 2014). These gender-specific constraints not only reduce the agricultural productivity of women and limit their contributions to agricultural production, but also involve broader economic and social costs. Closing this gender gap in access and use of productive resources, such as land, inputs and services, could increase the productivity potential of women and improve household welfare (FAO 2011b).

Furthermore, the existing agricultural policies and extension services fail to fully accommodate this feminization trend. For example, the Agriculture Perspective Plan (APP) (1996-2015) that was prepared by the GoN to accelerate agriculture growth, focused on women's access to credit, training and extension activities. However, due to lack of gender mainstreaming[9], the plan failed to improve women's access to resources (FAO 2010, Tamang et al 2014). Similarly, the National Agricultural Plan (NAP), 2005, and the Three-Year Interim Plan (TYIP), 2007-2008, was formulated to modernize and commercialize the agriculture sector (NPC 2007). While both plans sought to incorporate concerns of ethnic minorities and women, they were not effective for smallholder farmers in resource poor areas as the programs focused on a Pocket Package Strategy (PPS)[10], where activities were concentrated in only a few high-potential production systems (example dairy pockets) in the more accessible areas of Terai and low Hills (Joshi et al 2012b).

1.2 Nutrition issues in Nepal

The important factors contributing to food insecurity and malnutrition in Nepal are diverse and include limited arable land, seasonal fluctuations in yields, the recently ended civil war, inappropriate sanitation and hygiene practices, suboptimal infant and young child feeding practices, and the sexual division of household labor, which places women in a disadvantaged position (Fang et al. 2007, Joshi et al. 2012a, USAID Feed the Future 2011, Smith et al. 2003, Haddad et al. 1996). Food insecurity win a household can reduce dietary diversity, nutrient intake and nutritional status of its members, and in instances of inequitable intrahousehold distribution carries particularly onerous implications for vulnerable groups including infants, young children, and women. This in turn can negatively affect the nation's productivity and economic development by reducing work capacity, cognitive development, academic performance, and contributing to disease and mortality.

According to the 2011 Nepal Demographic and Health Survey (NDHS)[11] and Ministry of Health and

---

[9] Gender mainstreaming is a concept of assessing the different implications for women and men of any planned policy action.

[10] PPS is an operational plan of the Agricultural Perspective Plan (APP) that emphasizes that agricultural production efforts should be concentrated in a geographically defined pocket where supporting activities needed to boost production are made available to farmers in those areas (Suvedi and McNamara 2011).

[11] NDHS data provides the most comprehensive assessment of nutrition outcomes available for Nepal (Shively 2011). The NDHS data are available for five survey years, 1987, 1996, 2001, 2006, and 2011. The most recent findings found here: http://dhsprogram.com/pubs/pdf/SR189/SR189.pdf

Population (MoHP), 41% of children under five years were stunted[12], 16 percent severely stunted, 29% underweight[13], and 11% were wasted[14] (Nepal MoHP 2012)[9], with substantial regional variations (see Figures 6 and 7). In addition, the NDHS survey found that 46% of Nepalese children in this category are anemic and that this figure declined by only two percentage points in the past five years. The intensity of poverty, food insecurity and malnutrition varies depending on the geographical region of the country.

The regional variations in health and nutrition outcomes are caused by socioeconomic, demographic, cultural, gender, and ethnicity/caste factors. For example, the prevalence of stunting is highest among the Dalits in the Hills and Terai; and lowest among the Newars (National Planning Commission 2013). The Dalits and other socially excluded ethnic and religious groups face unique disadvantages (Nepal MoHP 2012, Nepal Global Health Initiative Strategy 2010; Joshi et al. 2012a; USAID Feed the Future 2010)[15]. For example, there is income inequality across these vulnerable groups and they have limited knowledge regarding nutrition and appropriate hygiene and caring practices (Fang et al 2007). Figure 6 illustrates the nutrition disparity across ethnic and caste groups in different ecological zones. Similarly, stunting of children, under the age of five years, is more common in the Mountain and Hill regions while wasting (thin for height) and underweight were more prevalent in the Terai region (UNICEF 2006, and Nepal Ministry of Health and Population 2009).

The Far-Western and Mid-Western rural regions struggle with chronic food deficits, wherein the food supply does not meet the demands of the population (Fang et al 2007), mainly due to poverty and high market prices in the region (Fang et al. 2007). Nearly 42 out of total 75 districts in the country were considered to be food deficit. Among other reasons; low agricultural production, lack of basic infrastructure, expensive imported food, and climate change play a major role in contributing to food insecurity in these regions (Kilpatrick 2011).

Despite overall progress in poverty reduction, food insecurity and chronic under-nutrition, over the last 15 years, 25% of households are considered food poor (i.e., the total value of their food consumption is insufficient to ensure a basic diet), and nearly 50% of children under five years of age suffer from chronic under-nutrition (National Planning Commission 2013). The 2013 Nepal Thematic Report on Food Security and Nutrition found that one in five households had an inadequate diet based on the Food Consumption Score[16], and one in four households were considered food poor[17] (National Planning Commission 2013). In addition, the study found no significant difference in average dietary energy intake between urban and rural areas. The report also found that household vegetable consumption has almost tripled as compared to

---

[12] Children whose height-for-age-Z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered short for their age and defined as stunted.

[13] Children whose weight-for-age-Z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are classified as underweight.

[14] Children with weight-for-height-Z-scores below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered thin and define as wasted.

[15] Additional information on caste, religion, ethnic and socially disadvantaged groups in Nepal can be found in the following World Bank report. http://siteresources.worldbank.org/EXTSOCIALDEV/Resources/3177394-1168615404141/NepalGSEASummaryReport-part1.pdf

[16] FCS measures food diversity (the types of food consumed), food frequency (the number of days each food group is consumed), and the relative nutritional importance of different food groups. The following document measures this in greater detail: http://www.wfp.org/content/nepal-thematic-report-food-security-and-nutrition-march-2013

[17]Food Poor is a food poverty indicator that reflects those who consume a diet with a value below the cost of a basic adequate diet (regardless of the source of food). The following document measures this in greater detail: http://www.wfp.org/content/nepal-thematic-report-food-security-and-nutrition-march-2013

2003, and consumption of meat and fish has more than doubled. This may have been the result of urbanization and remittance income that have helped reduce overall poverty and improved nutrition and food security across the country.

1.2.1 Gender roles in the Nutrition sector

A growing body of literature emphasizes the importance of gender roles in relation to increased food availability, improved nutrition, and increased income within the household (Arimond et al. 2010, Meinzen-Dick et al. 2012, Gillespie, Harris, and Kadiyala 2012). Malapit et al. (2013) assessed WEAI[18] indicators to investigate motivations behind women's decision-making in agricultural production in Nepal and they found a highly significant and positive correlation between women's autonomy in agricultural production[19] and improved maternal and child health and nutrition outcomes. Women's role in decision-making influences whether gains in income translate into nutritional improvements, while gender division of labor in agriculture influences the amount of time women have to take care of themselves and young children (Gillespie et al 2012). A study on the effect of Vegetable and Fruit Cash Crop Program (VCP)[20] in a sample of 264 households in the Mid-western region of Nepal found that while men and women spend roughly the same average time in cereal and livestock production, women spend more time caring for children younger than five, while men spend more time in fruit and vegetable production (Paolisso et al 2002).

Despite contributing to more than 80% in the agriculture labor force (ILO 2014), 24% of women in Nepal have low body mass index (WFP and NDRI 2010). This is because they are unable to consume sufficient and nutritious food for a healthy diet (Adhikari and Bhole, 1999). Gender biases and discriminations in the sharing of food within society and household, such as women eating last or leftovers and discouraged from eating certain nutritious food when pregnant or lactating[21] etc., have been the major cause of their food insecurity (Messer 1997, Shively 2011, Bishokarma and Amir 2014). In addition, females from poor and socially excluded groups of the society were more vulnerable to malnutrition than others (Adhikari and Ghimire, 2006). A study on gender and food insecurity in resource scare areas of Nepal found that gender based food distribution discrimination practices during the menstruation cycle had more impacts on high caste women, while eating last had more impacts on the Dalit women (Bishokarma and Amir 2014).

Factors that contribute to childhood under-nutrition in Nepal include food insecurity, inadequate consumption of nutrient-dense foods, poor access to safe drinking water and adequate sanitation (World Bank, 2010), suboptimal breastfeeding practices, and low birth weight (LBW) due to poor maternal nutrition (Shively 2011). At the household level, mother's education, rather than economic well-being, is the main determinant of nutritional status and food security (Sah 2005; Nyyssöla 2007). NDHS data from 2006 showed that children of uneducated mothers, across all wealth and caste status, are more likely to be underweight than their cohorts (UNICEF, 2010). Many studies have found that an integrated approach to improve the overall socioeconomics condition of the families, maternal education, and awareness of optimal nutrition practices can help improve household food insecurity and malnutrition among women and children (Pant 2008; Osei et al 2010; Bishokarma and Amir 2014).

---

[18] The study uses Women's Empowerment in Agriculture Index (WEAI) and its component indicators (Alkire et al. 2013), to assess women's empowerment in agriculture and nutritional outcomes in rural Nepal.

[19] According to Malapit et al (2013), autonomy in agricultural production includes decisions on what inputs to buy, what crops to grow, what livestock to raise, etc. reflects the extent to which the respondent's motivation for decision-making reflects his or her values rather than a desire to please others or avoid harm.

[20] The goal of the VCP was to increase commercial production of fruits and vegetables in farm households of 22 communities in five districts of Rapti, in the Mid-western region of Nepal (Paolisso et al 2002).

[21] Read about Suaahara project success story on this here: http://ccp.jhu.edu/improving-nutrition-nepal-world-food-day/

Many studies highlight the positive role of women on their child's health and nutritional status (Malapit et al. 2013; Bloom et al. 2001; Brunson et al. 2009; Desai and Johnson 2005). Despite efforts[22] from various governmental and non-governmental organizations to empower Nepalese women, there has been very little improvement in the socio-economic status of women (Mahat 2003). Since women are predominantly in charge of household food preparations and allocation, and child rearing, targeted interventions[23] aimed at women's groups, while including men's participation, could impact household behavioral changes associated with positive nutrition outcomes.

2. Agricultural Extension System (AES) Institutional Framework

Although agriculture extension in Nepal began in the 1920's with the inception of the Department of Agriculture (DoA) (Suvedi and McNamara 2011), formal agricultural extension services began in the early 1950s with the import of foreign technologies (MoAC 2010) and the introduction of community development programs (Suvedi and Pyakuryal, 2001). The DoA was responsible for both agriculture research and extension in the country until the Nepal Agricultural Research Council (NARC) was established in 1991 (NARC 2010). NARC, which falls within the MoAC, is the main agency responsible for agricultural research in the country. The main goal of NARC is to utilize institutional, human and financial resources from government and stakeholders with a focus on food security and sustainability of agricultural systems (Gauchan, Joshi, & Biggs, 2003). According to MoAC (2010), NARC focuses on crop research to enhance productivity but high-value production systems such as livestock, horticulture, fisheries and medicinal plants have not received adequate research priority. As of July 2010, the extension service coverage provided by the government was around 15% of agricultural households nationwide (MoAC 2010), with very few female extension workers.

Currently, Nepal has pluralistic extension services with various government and non-government organizations offering education and training to farmers. Government agencies under MoAC that deliver extension services in the country include the DoA and Department of Livestock Services (DLS), and their network of regional and district offices, service centers, training institutes, farms, and farmers groups (MoAC 2010) (see Chart 1). The DoA and DLS follow the PPS approach and provide trainings to farmers' groups, cooperatives, and community-based organizations within the prioritized "pockets" of areas.[9] As of 2007, DoA and DLS had mobilized approximately 22,000 farmers' groups and 1,564 dairy cooperatives (DLS 2010). Over the years, these agencies have practiced different extension approaches such as the Integrated Rural Development Projects, Training and Visit System, Block Production Program, Tuki System, Farming System Research and Extension, Groups Approach, Pocket Package Strategy, and the Lumle Agricultural Research Center and Pakhribas Agricultural Research Center (Suvedi and Pyakuryal 2001). Although these systems were implemented with varying degrees of success, the lessons learned from these initiatives have not been institutionalized largely due to budgetary limitations (MoAc 2010).

---

[22] The Government of Nepal (GoN) has made several interventions with different degrees of success to introduce gender sensitive policies and also to address the problem of under-nutrition in Nepal (for example, establishment of a nationwide program for mid-day meals (Shively 2011)).

[23] Examples of targeted interventions include credit programs to help rural women purchase improved farm inputs, and nutrition education programs that address vitamin A deficiency. Also see Suaahara project for examples on targeted nutrition interventions. http://www.usaid.gov/nepal/fact-sheets/suaahara-project-good-nutrition

Chart 1: Organizational structure of the Government AES in Nepal (Source: FAO 2010)

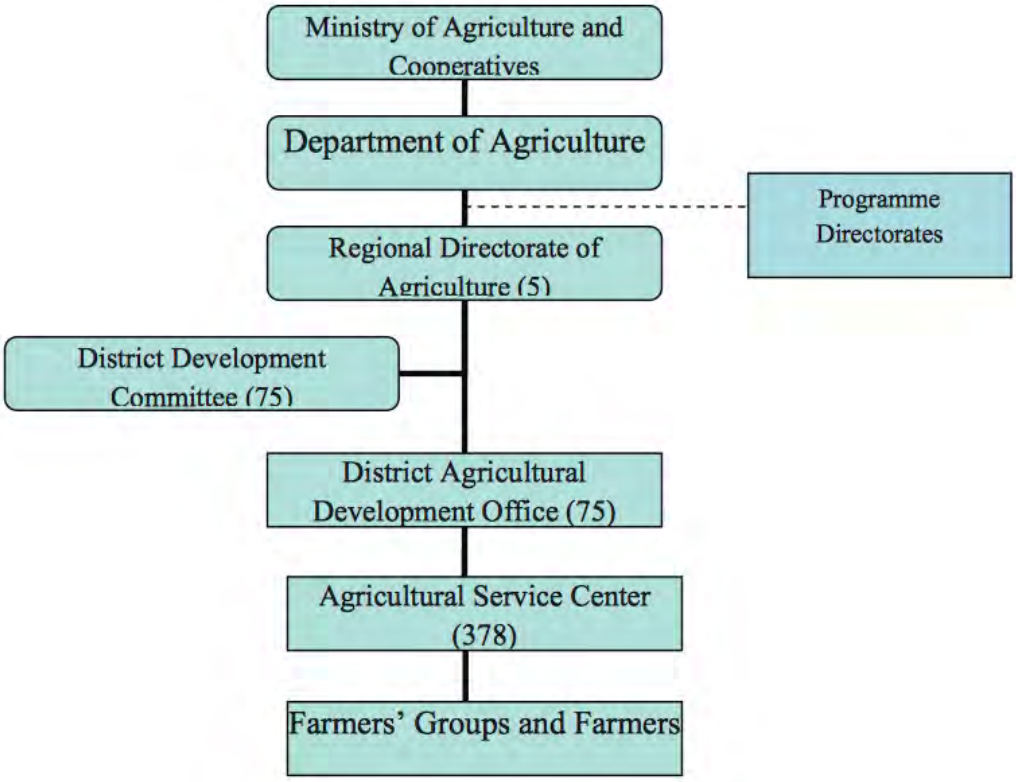


Table 2 below lists the timeline of institutional organizations that were adopted for the planning and delivery of agriculture research and extension programs in the country. The list reveals that agricultural research in Nepal has been a public sector activity with a top-down approach and frequent changes in the organizational structure as political instability continues in Nepal. According to the MoAC (2010), several attempts were made to create a "one-window" extension service but failed to materialize. Furthermore, these frequent changes in organizational structure demonstrate a constant source of uncertainty that further contributes to the slow growth of agriculture development in the country (MoAC 2009). Furthermore, the civil service personnel working in these departments operate under tremendous pressure from their affiliated political parties (Suvedi and McNamara 2011).

Table 2. Timeline of various institutions for agriculture development in Nepal

1921 Office of Agriculture within Singh Durbar, Kathmandu
1924 Department of Agriculture (DoA)
1937 Agriculture Council and Vocational Agriculture School
1952 Tribhuvan Village Development Program
1953 Department of Cooperatives (DoC)
1955 Research Stations
1957 School of Agriculture (now Institute of Agriculture and Animal Science)
1961 Department of Food Technology and Quality Control (DFTQC)

1965 Agricultural Input Corporation (AIC)
1966 DoA split into five departments: Department of Agricultural Extension
1968 Agricultural Development Bank (ADB)
1968 Lumle Agricultural Research Center (LARC)
1972 Five Departments merged to form single DoA
1975 Agricultural Project Service Centre (APROSC)
1975 Pakhribas Agricultural Research Center (PARC)
1977 Small Farmers' Development Program (SFDP) started
1979 DoA and Department of Livestock Development and Animal Health formed.
1985 National Agricultural Research and Services Centre (NARSC)
1989 LARC and PARC handed over to NARSC
1990 Department of Horticulture
1991 Departments merged again into DoA
1991 Nepal Agricultural Research Council (NARC) established
1995 Department of Livestock Services (DLS) and DoA split from DoA
2000 APROSC liquidated
2001 Nepal Agricultural Research and Development Fund (NARDF) established

Source: Suvedi and McNamara 2011, FAO 2010; Suvedi and Pyakuryal 2001

Suvedi and McNamara (2011) note three types of NGOs involved in extension activities for farmers, and commercial producers, and agribusiness operators in Nepal:

1. International NGOs (or INGOs): For example, Winrock International-Nepal[24], Heifer International-Nepal[25], Asia Network of Sustainable Agriculture and Bio-resources (ANSAB)[26], Helvatas[27], and Helen-Keller International-Nepal[28]
2. National NGOs: For example, the Center for Environmental and Agricultural Policy Research, Extension and Development (CEPREAD)[29], Rural Reconstruction Nepal (RRN)[30], and Forum for Rural Welfare and Agricultural Reform for Development (FORWARD)[31]
3. Local NGOs operating within a district or Village Development Committee (VDCs) through District Agriculture Development Officer (DADO), Local Agricultural Resource Persons (LARPs), and Village

[24] Additional information available at: http://www.winrock.org.np

[25] Additional information available at: http://www.heifer.org/ending-hunger/our-work/countries/asia/nepal.html

[26] Additional information available at: http://www.ansab.org

[27] Additional information available at: http://nepal.helvetas.org/en/

[28] Additional information available at: http://www.hki.org/helen-keller-international-nepal#.VabJOYvBybU

[29] Additional information available at: http://www.ceapred.org.np

[30] Additional information available at: http://www.rrn.org.np

[31] Additional information available at: http://forwardnepal.org

Animal Health Workers (VAHWs).

All the above organizations have helped form cooperatives and farmers' groups for production and marketing of farm products. The sustainability of these time and budget constrained services relies heavily on the availability of external funds. Many of these NGOs are financed by donors such as USAID, the European Union (EU), the Japanese International Cooperation Agency (JICA), the Swiss Agency for Development Cooperation (SDC), the Department for International Development (DFID) etc. The UN agencies actively funding projects in Nepal include FAO, ILO, UNDP, UNICEF, UNEP, WHO and WFP.

Many of the INGOs in Nepal continue to actively work with the GoN in providing extension services to improve the agriculture and nutrition sector (See Annex D). As the government increasingly accepts that a gender dimension should be added to extension and training services, "enhancing integration of gender in agriculture" has been selected as one of the important components of National Agriculture Sector Development Priority (NASDP) plan (MoAC 2010). The following Table 3 lists some of the on-going INGO projects with gender sensitive objectives that have partnered with various departments within the GoN.

Table 3: Gender sensitive INGO projects implemented with GoN

Gender Sensitive Projects/Programs	**Duration**	**Executing Government Agency**	**Development Partners / Institutions/INGO**
1. Project for Agricultural commercialization and Trade (PACT) • *Gender integration:* enhance access of women and disadvantaged groups to project's resources; hire women in managerial positions, construct separate toilets for women to promote hygiene and safety, provide training and orientation so that they can enhance their access to and control over market resources • *Results*: Women participation rate increased by 43% *More information:* http://pact.gov.np/?option=home	2009 - 2018	MoAC	World Bank (WB)/International Development Agency (IDA)
2. Social Safety Net Project (SSNP) • *Gender integration:* Ensured that about half of the beneficiaries were women, many of whom were of reproductive age; and that pregnant or nursing women participated in light public work programs and received access to food/cash • *Results*: Project benefited 185,934 households against the target of 170,000 and of these 58% were women. Promoted nutritional education among pregnant and nursing women. *More information:* http://documents.worldbank.org/curated/en/2015/05/24481713/nepal-social-safety-nets-project	2007-2013	Department of Agriculture (DoA), Ministry Of Federal Affairs and Local Development (MoFALD), and MoHP	WB/IDA
3. Community Livestock Development Project (CLDP) • *Gender integration:* support poverty reduction through	2003-2010	Department of Livestock Services (DLS)	Asian Development Bank (ADB)

small livestock development and microcredit for women, and increasing agricultural income • *Results:* Nutritional intake of children under 6 years of age increased by 19.1%, compared with the target of 20%. The project achieved 62% female participation in farmer groups, against the target of 35%. *More information:* http://www.adb.org/sites/default/files/publication/30141/nepal-community-livestock-development-project-brief.pdf			
4. Community Managed Irrigated Agriculture Sector Project (CMIASP) • *Gender integration:* targeted women, landless, poor, vulnerable to provide them income generation training. • *Results:* promoted participatory approach by mobilizing communities through the organization of 111 Water Users Associations (WUAs) with representation of about 30% women *More information:* http://adb.org/projects/details?page=details&proj_id=33209-013	2006-2010	Ministry of Irrigation (MoI), DoI	ADB
5. Commercial Agricultural Development Project (CADP) • *Gender integration*: ensure fairer benefits to poor disadvantaged communities and women in commercial agriculture • *Results*: Increased participation rate of women in farmer groups and cooperatives *More information:* http://adb.org/projects/details?page=details&proj_id=34308-022	2009-2011	MoAC	ADB
6. Leasehold Forestry-Livestock (LFL)[32] • *Gender integration*: support government's capacity to implement leasehold forestry in a gender-sensitive way. Recruit and train women group promoters and village livestock assistants • *Results*: Women represent 38% of all members and holds key positions in Leasehold Forestry Users Groups *More information:* http://www.forestrynepal.org/project/2906	2005-2010	Department of Forests, Ministry of Forests and Soil Conservation	International Fund for Agricultural Development (IFAD)

Despite ongoing efforts of the NGOs and INGOs to actively provide extension services, the government of Nepal has also realized the need for reform (MoAC 2010) but efforts towards it seem lacking and less

[32] Additional information available at: http://www.forestrynepal.org/project/2906

comprehensive (GAFSP 2010). Delivery of gender-responsive services (e.g. training, extension and credit services) needs to be improved across all sectors and regions. Some of the challenges include lack of rural infrastructure for farm to market movement of agricultural products, political instability or too much political interference, weak linkages among extension, research and education sub-systems, and inadequate or inconsistent funding etc. There is an urgent need for efficient coordination of public sector, private sector and INGO extension efforts in order to address the needs of poor and marginal groups living in the remote areas with equal treatment to all (MoAC 2010). While private firms and NGOs can offer timely delivery of agricultural inputs such as improved seed, pesticides, fertilizer, and farming equipment; the cost, timeliness, and quality of these services must be monitored by MoAC units, such as DOA and DLS (Suvedi and McNamara 2011). Furthermore, there is a need for aligning agricultural research, education and extension services with priorities and demands of both men and women farmers (MoAC 2010, GAFSP 2010.

3. Feed the Future Multi-Year Strategy, Nepal

Nepal is one of 19 focus countries of President Obama's Feed the Future Initiative, designed to combat hunger and poverty.[33] The overall goal of Feed the Future Nepal is to reduce poverty by increasing agricultural sector growth and to improve the nutritional status of women and children (USAID Feed the Future 2011)[34]. In order to reach this goal, Feed the Future Nepal aims to help an estimated 165,000 households focusing on the poor and vulnerable Nepali women, children and family members. Feed the Future focuses its investments on 16-20 districts in the Terai and lower Hills in order to reach vulnerable population in the Far-Western, Mid-Western, and Western Regions (see Maps 3 and 4, Annex C). The proposed Feed the Future project districts are Baitadi, Dadeldhura, Kanchanpur, Doti, Kailali, Achham, Dailekh, Jajarkot, Rukum, Surkhet, Salyan, Rolpa, Phuthan, Banke, Bardiya, Dang, Kapilbastum, Palpa, Gulmi, and Arghakhanchi (See Annex E).

Despite high poverty in the proposed regions, the large population size increases the potential for return on investments. One of the main functions of the Feed the Future project is to coordinate the communication between government organizations (such as DOA, DLS and NARC) and the various NGOs in order to strengthen the pluralistic extension system and to scale-up extension activities (See Annex E). To meet this objective, Feed the Future seeks to strengthen the Agricultural Information and Communication Center (AICC)[35], expand use of LARPs/VAHWs, provide AgroVet[36] training for qualified youths, and support

---

[33] Overview of Nepal Feed the Future programs can be found in the following video: https://www.youtube.com/watch?v=-GheYkUq6fI and following presentation http://agrilinks.org/sites/default/files/resource/files/USAID%20Nepal%20FtF%20Overview%20for%20Innov%20Lab%20Meeting%20March%2010%202014.pdf

[34] Recent document available at: http://www.feedthefuture.gov/sites/default/files/country/strategies/files/NepalFTFMulti-YearStrategy.pdf

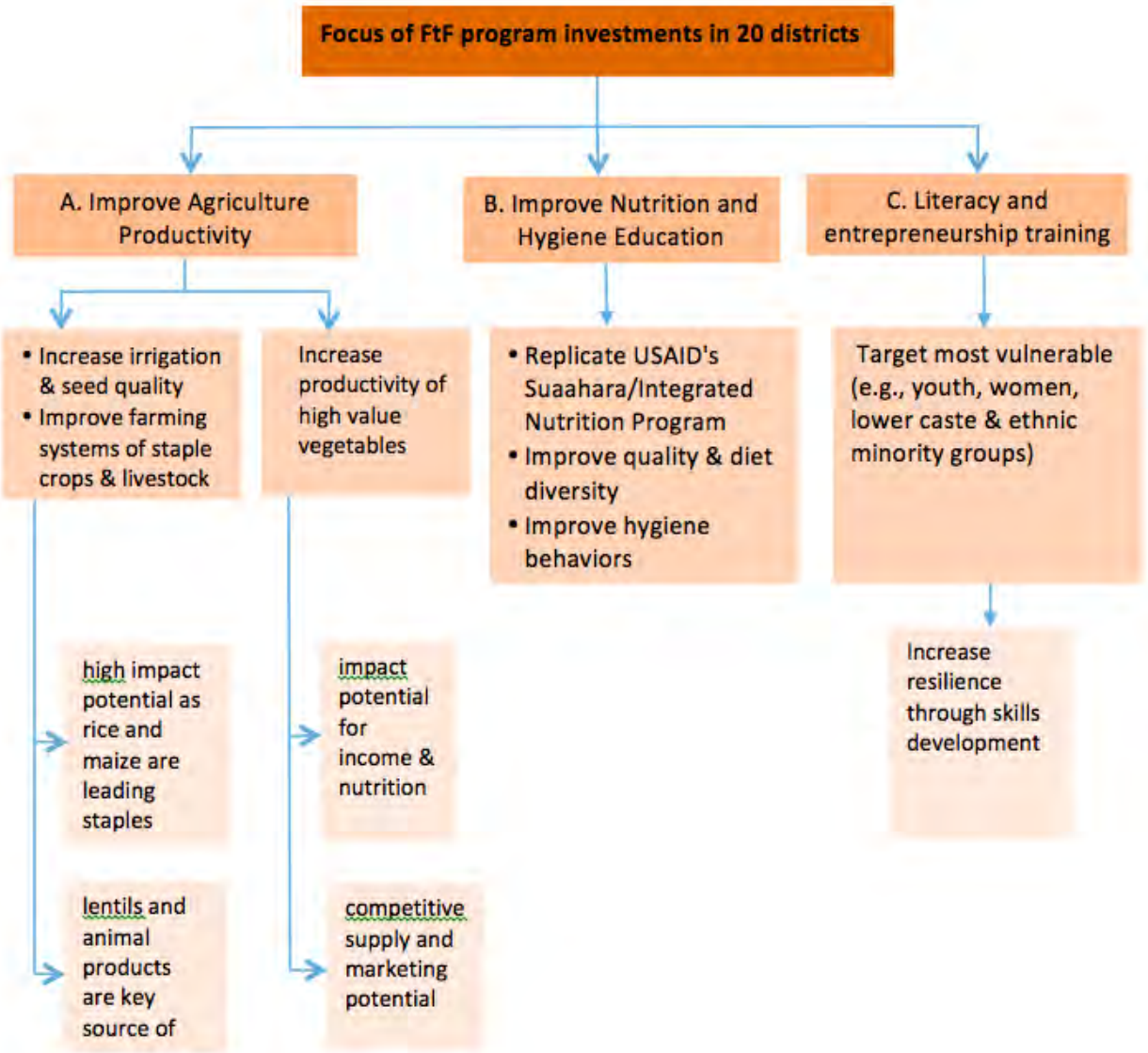
[35] The AICC Unit was formed in 2000 in order to disseminate agricultural technologies and techniques through mass media, such as radio, video and publications (Suvedi and McNamara 2011).

[36] AgroVets are private livestock technicians providing fee-based services (such as Artificial Insemination services, basic veterinary services, and diagnostic services) to farmers who are willing and able to pay for privately provided services.

internship programs for students in agriculture institutions[37] to work in Feed the Future project districts (Suvedi and McNamara 2011). In addition, the programs will be able to build on USAID/Nepal's experience in Economic Growth programs in these regions, such as Education for Income Generation (EIG) and Nepal Flood Recovery Program (NFRP) (USAID Feed the Future 2011).

The following Chart 3 outlines the core investments that are envisioned to reach vulnerable households with up to 1 million beneficiaries.

Chart 3: Feed the Future Program Investments in Nepal



[37] Institutions offering agriculture education and trainings in Nepal include Agricultural Information and Communication Center (AICC), Institute of Agriculture and Animal Science (IAAS), Himalayan College of Agricultural Science and Technology (HICAST), and Council for Technical Education and Vocational Training (CTEVT)

The four broad intermediate results from the Feed the Future initiative is outlined in chart below (USAID Feed the Future 2011).

Improved Agricultural Productivity	• Supply equipment and improved seed • Extension agents to advise and train farmers on best management practices • Assist GoN on agriculture policies, micro-credit issues • Improve irrigation, farming practices and techniques, and storage facilities • Develop and disseminate appropriate technologies for female farmers
Increased Agriculture Value Chain Productivity	• Improve seeds, post-harvest handling and storage facilities • Build domestic, regional, and international private sector alliances • Establish food safety standards, improved packaging, and SPS certification
Improved Diets and Nutrition	•Surveys and mass media to generate awareness of nutritional and health benefits •Food preparation training and enhance demand of processed nutritious foods •Engage schools, hospitals, hotels, and food service markets
Increased Resilience of Vulnerable Groups	•Integrate disadvantaged youth, women, and ethnic groups •Provide income generating activities and improve access to savings •Improve farming systems and capacity building to adapt to climate change and cope in emergency situations such as droughts or floods

Main U.S. Government agencies that are currently active in Nepal implementing various projects and programs include:[38]

1. USAID/Nepal: Health and Family Planning (particularly Integrated Nutrition Program (INP), Democracy

[38] Source of this list:
http://www.feedthefuture.gov/sites/default/files/country/strategies/files/NepalFTFMulti-YearStrategy.pdf

and Governance, Economic Growth programs (Nepal Economic, Agriculture, and Trade (NEAT), Education for Income Generation (EIG), Global Climate Change (GCC), Nepal Flood Recovery Program (NFRP))

2. USAID/Washington: Collaborative Research Support Program (CRSP) research and Cereals System Initiative for South Asia (CSISA) adaptation and dissemination of improved agriculture technologies and management approaches

1. USAID/NASA SERVIR program: Glacier melting, early warning system, and response
2. Department of State: Political and policy reform on trade and agriculture issues
3. Food for Peace: Support to WFP for emergency programs in remote mountain areas
4. U.S. Department of Agriculture (USDA): McGovern-Dole International Food for Education and Child Nutrition school feeding program (planned).
5. Peace Corps

Active USAID projects in the country as of December 2012 is illustrated in Maps 4 and 5, Annex C. As of March 2014, key USAID Nepal Feed the Future projects and activities are listed below.[39]

1. SUAAHARA Project

Suaahara, which means "good nutrition" in the local language, is a five-year, $46 million comprehensive community-focused and nutrition based USAID project. The project is currently being implemented in 20 districts of Nepal and works in consultation with the Ministry of Health and Population (MoHP) and relevant partners in the country. It focuses on the nutritional status of women and children and aims to improve: nutrition; maternal, newborn, and child health (MNCH) services; reproductive health/family planning services; water, sanitation and hygiene; and home-based gardening. The snapshot below gives a brief overview of the project.[40]

SNAPSHOT

Life of Project: August 2011 to August 2016

Goal: The health and well-being of Nepalis is improved and sustained.

Implementing Partners: Save the Children, in coordination with Helen Keller International, Jhpiego, Johns Hopkins Bloomberg School of Public Health Center for Communication Programs, the Government of Nepal Ministry of Health and Population, NEWAH, NPCS, and NTAG

Geographic Focus: 20 districts of Nepal

[39] Most of the projects in this list is from the following document: http://agrilinks.org/sites/default/files/resource/files/USAID%20Nepal%20FtF%20Overview%20for%20Innov%20Lab%20Meeting%20March%2010%202014.pdf

[40] More information available at http://www.usaid.gov/nepal/fact-sheets/suaahara-project-good-nutrition

2. Knowledge-based Integrated Sustainable Agriculture and Nutrition Project (KISAN)

KISAN is a five-year Feed the Future Initiative in Nepal that focuses on increasing agricultural productivity and improving nutrition outcomes. The snapshot below gives a brief overview of the project. [41]

SNAPSHOT

Life of Project:
February 2013 to February 2018

Target:
- 1 million Nepalis
- 160,000 rural households
- 20 districts in the West, Mid-West and Far-West region

Goal: Sustainably reduce poverty and hunger in Nepal by achieving inclusive growth in the agriculture sector, increasing the income of farm families and improving the nutritional status of pregnant and lactating women, children under five and their families.

Implementing Partners:
- Winrock International
- Center for Environmental and Agricultural Policy Research, Extension, and Development
- Development Project Service Center
- Nutrition Promotion and Consultancy Services
- Nepal Water for Health
- Antenna Foundation Nepal

3. Hill Maize Research Program (HMRP)

HMRP is a food security based project initiated in 1999 and funded by the Swiss Agency for

[41] More information available at: http://www.usaid.gov/nepal/fact-sheets/kisan-project

Development and Cooperation (SDC). The goal is to improve food security and income of poor and disadvantaged farm households in the hills of Nepal by raising the productivity and sustainability of maize-based cropping systems. The project covers 20 hill districts of Nepal and has gone through three phases between 1999 and 2010, with the fourth phase currently being implemented since August 2010.[42]

4. Cereal Systems Initiative for South Asia (CSISA)

CSISA was established in 2009 to promote South Asia's cereal-based cropping systems. It focuses on improving cropping systems, resource-conserving management technologies, new cereal varieties and hybrids, livestock feeding strategies and feed value chains, aquaculture systems and policies and markets. CSISA Nepal supports USAID's KISAN project, and focuses on the mid-hill and Terai districts, which also fall within USAID's Feed the Future target areas. CSISA Nepal's focus crops are maize, wheat, lentil and rice.[43]

CSISA works in collaboration with the following five CGIAR partners:

1. The International Maize and Wheat Improvement Center (CIMMYT)
2. The International Food Policy Research Institute (IFPRI)
3. The International Livestock Research Institute (ILRI)
4. The International Rice Research Institute (IRRI)
5. WorldFish

5. Integrated Pest Management Innovation Lab (IPM IL)

IPM IL, is a $500,000 USAID-funded project, that promotes integrated pest management practices in select horticultural crops in order to reduce pesticide use and crop losses to pest and plant diseases. It focuses on vegetable crops such as tomato, eggplant, gourd, cauliflower, cabbage, radish, broccolli and cucumber. The project also works in collaboration with the KISAN project across 20 districts in the hills and Terai of the Mid-West and Far-West regions. The snapshot below gives a brief overview of the project.[44]

SNAPSHOT

Life of Project: March 2013 to February 2016

Goal: Demonstrate technology packages for eliminating pesticide use in select high value vegetable crops

Implementing Partners: Virginia Tech and sub-award to International Development Enterprises (iDE Inc.)

Geographic Focus: 2 districts (Banke and Surkhet)

6. International Food Policy Research Institute (IFPRI)

[42] More information available at: http://hmrp.cimmyt.org

[43] More information available at: http://csisa.org/csisa-nepal/

[44] Additional information available at: http://www.usaid.gov/nepal/fact-sheets/integrated-pest-management-innovation-lab-project

IFPRI, established in 1975, seeks to provide sustainable research-based policy solutions to reduce poverty and malnutrition in developing countries.[45] The Agricultural Science and Technology Indicators (ASTI) initiative comprises a network of national, regional, and international agricultural R&D agencies and is managed by the International Service for National Agricultural Research (ISNAR) division of the International Food Policy Research Institute (IFPRI). Primary funding for the ASTI initiative's survey round in Asia was provided by the CGIAR Finance Committee/World Bank (Stads and Shrestha 2006).

7. Business Literacy Project

The Business Literacy project is a USAID funded project that builds on previous efforts and expand on integrated trainings that empower women and marginalized communities. The Nepal HC3 (Health Communication Capacity Collaborative) Project is four-year, $5 million project that focuses on youth, adolescents, migrants and marginalized and disadvantaged groups. The project will work closely with National Health Education Information Communication Center (NHEICC), in the Ministry of Health and Population, and Family Health Division (FHD) in order to support comprehensive, targeted Social Behavior Change and Communication (SBCC) campaigns and advocacy among these groups. Nepal HC3 will also develop the overall institutional and technical capacity of NHEICC with the ultimate goal of improving reproductive health outcomes in Nepal. [46]

SNAPSHOT

Life of Project: October 2013 - September 2017 (4yrs)

Goal: To strengthen the capacity of the NHEICC, the Family Health Division (FHD), other Ministry of Health and Population entities, and private and NGO partners to design, implement and evaluate high quality strategic family planning SBCC interventions, with the aim of improving health outcomes in Nepal.

Implementing Partners:

A consortium of John Hopkins University, Centre for Communication program (JHU-CCP) and local NGOs.

Geographic Focus: National focus with intensified programs in districts to be determined in coordination with NHEICC and FHD.

8. Peace Corps

[45] Additional information available at: http://www.ifpri.org/publication/nepal

[46] Additional information available at: http://www.usaid.gov/documents/1861/usaids-business-literacy-program-nepal

Peace Corps Nepal is one of the oldest development programs in the country that focuses on agriculture, nutrition and hygiene education. Since its initiation in 1962, more than 3,705 Peace Corps volunteers have served in Nepal.[47]

9. Initiative for Climate Change Adaptation (ICCA) Project

The ICCA project is a $2 million USAID project (duration 2012 to 2017) that will be implemented to aid the poor and rural communities of Nawalparasi, Rupandehi, Kapilbastu, Syangja, Kaski, Parbat, Dang and Rolpa districts, to plan and adapt to climate change impacts and increase incomes from climate-change-resilient opportunities. Implementing partners include International Development Enterprises (iDE) and Nepali partners: Rupantaran, and Resource Identification and Management Society Nepal (RIMS-Nepal). The project aims to benefit over 100,000 people by supporting climate change programs of the GoN. It supports the USG's Feed the Future initiative as it helps develop sustainable livelihood opportunities for over 20,000 smallholder families through sustainable use and management of non-timber forest products, high-value vegetable crops, coffee, and essential oils. [48]

10. Ghar Ghar Maa Swasthya (Healthy Homes) Project[49]

The Ghar Ghar Maa Swasthya, or Healthy Homes project, is a USAID funded project that works with the GoN in order to expand the depth, reach, and impact of the private sector in social marketing and provide affordable, high-quality maternal and child health, family planning, and HIV prevention products and services. The project builds on the successes of previous USAID-funded projects and contributes to increasing and improving Nepal's modern contraceptive prevalence rate, reducing the mortality rate among mothers and children under the age of five (including newborns), and reducing the incidence of HIV/AIDS. USAID funds and assists the Nepal CRS Company[50] to efficiently expand access to quality, affordable health care underserved communities, by increasing and improving Nepal's modern contraceptive prevalence rate, reducing the mortality rate among mothers and children under the age of five (including newborns), and reducing the incidence of HIV/AIDS.[51]

SNAPSHOT

Life of Project: 2010 to 2015

Goal: Establish the Nepal CRS Company as a profitable corporate leader in health products and increase the accessibility and availability of these products throughout Nepal, especially in hard-to-reach rural areas

Implementing Partners: Nepal CRS Company and Family Health International

Geographic Focus: National focus

---

[47] Additional information available at: http://nepal.peacecorps.gov

[48] Additional information available at: http://www.usaid.gov/nepal/fact-sheets/initiative-climate-change-adaptation-icca-project

[49] Complete updated list of USAID-funded projects in the Health sector can be found here: http://www.usaid.gov/nepal/global-health

[50] Nepal CRS Company, a social marketing organization, plays a key role in developing markets in Nepal for: condoms as a family planning and HIV/AIDS prevention product; contraceptives like oral pills, injectable Depo-Provera, intra-uterine contraceptive devices and implants; and maternal and child health products like oral rehydration salts, clean delivery kits, and water purification liquid.

[51] Additional information available at: http://www.usaid.gov/nepal/fact-sheets/ghar-ghar-maa-swasthya-healthy-homes-project

11. Health For Life (H4L) Project

H4L is a 5-year, $18.2 million, project (duration 2012 to 2017) that works with the MoHP in 14 districts in the Mid-Western and Western regions to plan, manage and deliver high-quality and equitable family planning, maternal, newborn, and child health services. The project addresses the following areas: local health systems governance, data for decision making and evidence-based policy development, human resources management, quality improvement systems, and knowledge and behavior change. Similar to other USAID funded projects, H4L is expected to build on the successes of past USAID programs and contribute to improvements in Nepal's neonatal mortality rate, maternal mortality rate, modern contraceptive prevalence rate, health information system performance index, disparity between richest and poorest quintiles in use of specific services and participation in governance-related activities at the local level.[52]

SNAPSHOT

Life of Project: December 2012 to December 2017

Goal: To strengthen Government of Nepal capacity to plan, manage and deliver high quality family planning and maternal, newborn and child health services at the district and local levels.

Implementing Partners: RTI International, Jhpiego and local NGOs

Geographic Focus: National focus plus district focus in the following: Argakhanchi, Kapilbastu, Dang, Rolpa, Pyuthan, Rukum, Jajarkot, Salyan, Banke, Bardiya, Surkhet, Daliekh, Kalikot and Jumla

12. Red Book Support Program

USAID funded program that works directly with MoHP to improve maternal and child health services to marginalized and vulnerable communities. Project activities include training MoHP officials to improve the availability, accessibility and quality of voluntary family planning services, and strengthen short-term and permanent family planning services at health facilities. The program also supports regional performance review and planning meetings and refresher trainings for MoHP and Female

SNAPSHOT

Life of Project: 2013 - 2019

Goal: Support MOHP to provide sustainable, accessible and quality family planning/reproductive health, maternal, neonatal and child health, and nutrition services to the Nepali people, particularly the poor and marginalized, and to strengthen systems to ensure achievement of Nepal's 2015 Millennium Development Goals for health.

[52] Additional information available at: http://www.usaid.gov/nepal/fact-sheets/health-life-h4l-project

Community Health Volunteers. [53]

13. Saath-Saath Project

The Saath-Saath Project is a $27.5 million, five year project, that works with the GoN and builds on the successes and lessons of the highly successful Advancing Surveillance, Policies, Prevention, Care and Support to Fight HIV/AIDS (ASHA) Project – USAID's previous activity to combat HIV and AIDS in Nepal. The main aim of Saath-Saath is to reduce the transmission and impact of HIV/AIDS and improve reproductive health among selected key populations.[54]

SNAPSHOT

Life of Project: October 2011 to September 2016

Goal: To reduce the transmission and impact of HIV and AIDS and improve reproductive health among selected most-at-risk populations in a manner that supports the Government of Nepal's services at the district and local levels.

Implementing Partners: FHI 360 Nepal, in partnership with Association of Medical Doctors of Asia and more than 40 local implementing partner agencies.

Geographic Focus: 33 districts nationwide

14. School-Led Safe Water, Sanitation and Hygiene Improvement (Su-SWASTHA) Project

The Su-SWASTHA project is a $312,000 USAID funded project that supports school- and community-led total sanitation efforts. Under this program, schools will receive improved, child-friendly (with appropriate heights of water taps and urinals) and gender friendly (separate toilets) water and sanitation improvements to promote hygienic behavior. The aim is to declare Swastha ("healthy") communities, where all households not only have permanent toilets but also use household water treatment systems and improved cooking stoves, and practice good personal and food hygiene behavior.

SNAPSHOT

Life of Project: January 2011 to January 2014

Goal: To improve the health and well-being of poor people in mid-western Nepal through an integrated approach that improves access to safe water, sanitation and hygiene in a sustainable manner.

Implementing Partners: Nepali NGO Environment and Public Health Organization (ENPHO)

Geographic Focus: Surkhet district, mid-western region

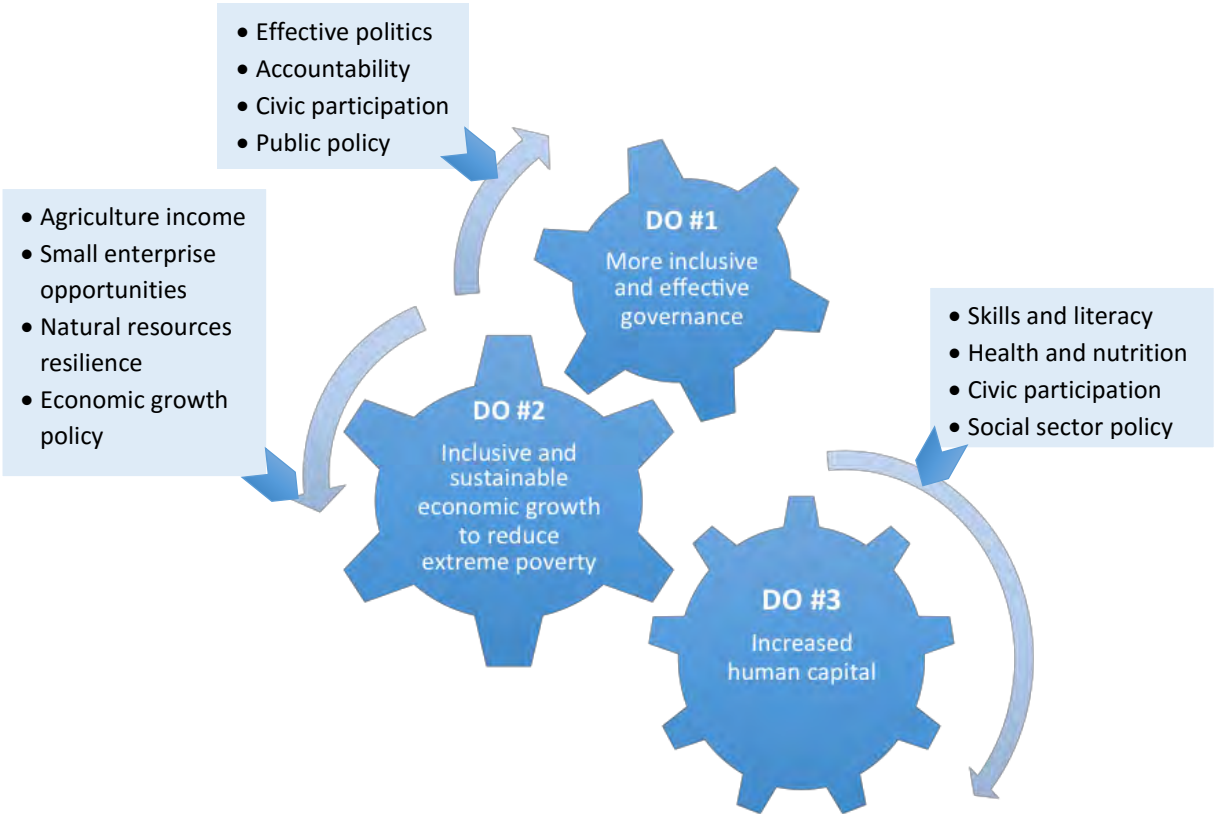
[53] Additional information available at: http://www.usaid.gov/nepal/fact-sheets/red-book-support-program

[54] Additional information available at: http://www.usaid.gov/nepal/fact-sheets/saath-saath-project

55

4. USAID's Country Development Cooperation Strategy (CDCS), Nepal

The overarching goal of USAID's Country Development Cooperation Strategy (CDCS) over the next five years (2014-2018) is to foster "a more democratic, prosperous, and resilient Nepal."[56] The aim is to combat extreme poverty, build resilience, and lift the country out of its "Least Developed" status. The strategy is aligned to support the Government of Nepal's (GoN) Three-Year Development Plan (2013-2016) to – Increase agricultural productivity, diversification and commercialization; Improve basic education and health, drinking water and sanitation; Promote good governance; and, Promote the tourism, industry and trade sectors (USAID 2015). The chart below outlines the three mutually reinforcing Development Objectives (DOs) that contribute to achieving the CDCS's goal. The DOs are interconnected because of the integration of cross- sector development and governance to achieve sustainable results.



[55] Additional information available at: http://www.usaid.gov/nepal/fact-sheets/school-led-safe-water-sanitation-and-hygiene-improvement-su-swastha

[56] Summary of USAID's CDCS provided in this report.
http://www.usaid.gov/sites/default/files/documents/1861/CDCS%20summary_Final.pdf

5. Conclusions

Despite being a predominantly agricultural country, agriculture development has failed to keep up with the increased demand from a growing population. Literature portrays this as a result of weaknesses in the poor linkages between agricultural research and extension services and indicates urgent need for agricultural extension reform. Incorporating past lessons and integrating modern concepts and theories through trainings on improved agricultural technologies are some of the ways to reform the agricultural extension process. However, this cannot be done without effective and comprehensive coordination between the government institutions and the various NGOs and INGOs already operating in the country. Educating, strengthening and motivating the farmers' groups and their networks are vital for project success along with inclusion of women farmers as project participants. In the context of time bound nature of different NGO projects involved in agriculture and nutrition, linking the project participants with government and local extension institutions is an important factor for the post-project sustainability of these projects.

The overall socio-economic status of women in Nepal lag far behind that of men, mainly in education, politics, economic rights, and in household decision-making process. Although women are actively engaged in farming and more so in current years, due to migration of male workers to urban areas and abroad, front-line extension workers are mostly men. Therefore, there is an urgent need to train and recruit female extension workers. In order to encourage gender integration in agriculture and nutrition projects, there is a need to actively recognize, reward and fund national and local projects and extension workers who perform gender-sensitive work.

ANNEX A: List of References

- Adhikari, A. and H.G. Bohle. (1999). Food Crisis in Nepal. Adroit Publication: Delhi.
- Adhikari, J. and S. Ghimire. (2006). Changing Food Chains (Nepali). Martin Chautari: Kathmandu.
- Allendorf, K. (2007). Do women's land rights promote empowerment and child health in Nepal? World development, 35(11), 1975-1988.
- Arimond, M., D. Wiesmann, E. Becquey, A. Carriquiry, M. C. Daniels, M. Deitchler, N. Fanou-Fogny, et al. 2010. "Simple Food Group Diversity Indicators Predict Micronutrient Adequacy of Women's Diets in 5 Diverse, Resource-Poor Settings." Journal of Nutrition 140 (11): 2059S–2069S.
- Basnett, Y., & Pandey, P. R. (2014). Industrialization and Global Value Chain Participation: An Examination of Constraints Faced by the Private Sector in Nepal. Asian Development Bank Economics Working Paper Series, (410).
- Bishokarma, N. K., & Amir, R. M. (2014). Gender and food insecurity: food entitlement in resource scarce areas in the far-western region of Nepal. J. Glob. Innov. Agric. Soc. Sci, 2, 45-51.
- Bloom, S. S., Wypij, D., & Gupta, M. D. (2001). Dimensions of women's autonomy and the influence on maternal health care utilization in a north Indian city. Demography, 38(1), 67-78.
- Brown, S., & Shrestha, B. (2000). Market-Driven Land-Use Dynamics in the Middle Mountains of Nepal, Journal of Environmental Management. 59, 217-225. doi: 10.1006/jema.2000.0355, http://dx.doi.org/10.1006/jema.2000.0355
- Brunson, E. K., Shell-Duncan, B., & Steele, M. (2009). Women's autonomy and its relationship to children's nutrition among the Rendille of northern Kenya. American Journal of Human Biology, 21(1), 55-64.
- Cameron, M. M. (1995). Transformations of gender and caste divisions of labor in rural Nepal: Land, hierarchy, and the case of untouchable women. Journal of Anthropological research, 215-246.
- CBS (Central Bureau of Statistics) (2011). Nepal Living Standard Survey. National Planning Commission Secretariat, Government of Nepal.
- CBS (Central Bureau of Statistics) (2014). Nepal Living Standard Survey. National Planning Commission Secretariat, Government of Nepal.
- CIA World Factbook (2015), U.S. Department of State, Area Handbook of the US Library of Congress
- Desai, S., & Johnson, K. (2005). Women's Decisionmaking and Child Health: Familial and social hierarchies. A focus on gender: Collected papers on gender using DHS data, 55-68.
- Deshar, B. D. (2013). An overview of agricultural degradation in Nepal and its impact on economy and environment. Global Journal of Economic and Social Development, 3(1), 1-20.
- Department for International Development (DFID) (2013) 'Regional Dimensions of Poverty and Vulnerability in Nepal'. Discussion Paper. Kathmandu: UK Department for International Development.
- Department of Livestock Services (DLS). (2010). Annual Progress Report Fiscal Year 2009/10. Lalitpur: Department of Livestock Services.
- Fang, C., R. Sharma, R. Favre, and S. Hollema. (2007) "FAO/WFP food security assessment mission to Nepal." Rome: Food and Agriculture Organisation/World Food Programme.

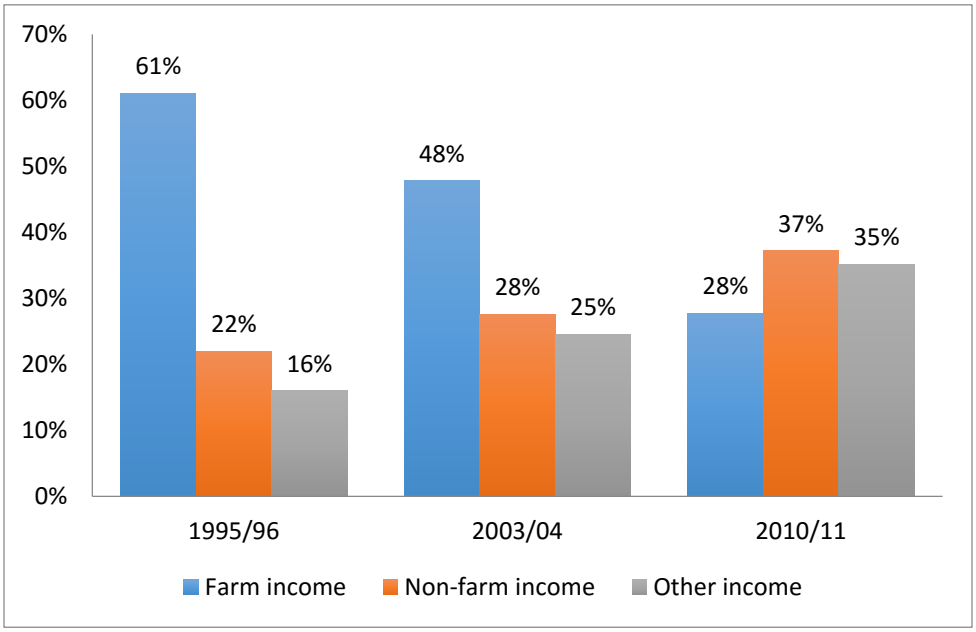
- FAO (2010) "Integration of Gender in Agriculture: An Analysis of Situation". Food and Agriculture Organization of the United Nations UN Complex, Pulchowk, Nepal
- FAO (2011a). The role of women in agriculture. Rome: Agriculture Development Economics Division, Food and Agriculture Organization, ESA Working Paper, (11-02).
- FAO (2011b). The State of Food and Agriculture 2010-2011: Women in Agriculture: Closing the Gender Gap for Development. (FAO, Rome, 2011)
- Global Agriculture and Food Security Program (GAFSP) (2010). Nepal Agriculture and Food Security Country Investment Plan. Washington, DC, ActionAid. International USA.
- Gartaula, H.N., Niehof A. and Visser L. (2010). Feminisation of Agriculture as an Effect of Male out Migration: Unexpected Outcomes from Jhapa District, Eastern Nepal. The International Journal of Interdisciplinary Social Sciences, 5(2): 565-577.
- Gauchan, D., Joshi, M., & Biggs, S. (2003). A strategy for strengthening participatory technology development in agriculture and natural resources innovations systems: the case of Nepal. International Journal of Technology Management and Sustainable Development, 2, 39-52.
- Gharti, D. B., Darai, R., Subedi, S., Sarker, A., & Kumar, S. (2014). Grain Legumes in Nepal: Present Scenario and Future Prospects. World Journal of Agricultural Research, 2(5), 216-222.
- Gillespie S, Harris L, Kadiyala S. (2012). The Agriculture-Nutrition Disconnect in India, What Do We Know? Discussion Paper 01187, International Food Policy Research Institute, Washington, D.C.
- Gillespie, S. (2001). "Health and Nutrition." In Empowering Women to Achieve Food Security, Brief 8, edited by A. Quisumbing and R. Meinzen-Dick. Washington, DC: International Food Policy Research Institute.
- Gittelsohn, J. (1991). Opening the box: intrahousehold food allocation in rural Nepal. Social Science & Medicine, 33(10), 1141-1154
- Haddad, L., C. Pen□a, C. Nishida, and S. Street. 1996. Food Security and Nutrition Implications of Intrahousehold Bias: A Review of Literature. FCND Discussion Paper 19. Washington, DC: International Food Policy Research Institute.
- Headey, D. D. (2012). "Developmental Drivers of Nutritional Change: A Cross-Country Analysis." World Development 42: 76–88.
- Hoddinott, J. (2011). "Agriculture, Health, and Nutrition: Toward Conceptualizing the Linkages." In 2020 Conference: Leveraging Agriculture for Improving Nutrition and Health. Washington, DC: International Food Policy Research Institute.
- Independent Office of Evaluation/ International Fund for Agricultural Development (IOE/IFAD). (2013). Nepal Country Programme Evaluation. Report No. 3010-NP. Document of the International Fund for Agricultural Development, May 2013.
- International Labor Organization (ILO) (2014). Nepal Labor Market Update, ILO Country Office for Nepal, November 2014
- Joshi, N., K. E. Agho, M. J. Dibley, U. Senarath, and K. Tiwari. (2012a). "Determinants of Inappropriate Complementary Feeding Practices in Young Children in Nepal: Secondary Data Analysis of Demographic and Health Survey 2006." Maternal and Child Nutrition 8 (Suppl 1): 45–59.

- Joshi, K. D., Conroy, C., & Witcombe, J. R. (2012b). Agriculture, seed, and innovation in Nepal: Industry and policy issues for the future. International food Policy Research Institute Project Paper, 60.
- Karkee, M. (2008). Nepal economic growth assessment-agriculture. United states agency for international development (USAID), Kathmandu, Nepal.
- Kollmair, M. 2011. Labour Migration in the Himalayas: Opportunities and Challenges. Sustainable Mountain Development, 59.
- Kilpatrick, K. (2011). "Improving food security for vulnerable communities in Nepal. Oxfam Case Study."
- Mahat, I. (2003). Women's development in Nepal: The myth of empowerment. PRAXIS The Fletcher Journal of International Development, 18.
- Malapit,H.J., S.Kadiyala, A.Quisumbing, K.Cunningham, andP.Tyagi. (2013). "Women's empowerment in agriculture, production diversity, and nutrition: evidence from Nepal". IFPRI Discussion Paper 01313. Washington DC: International Food Policy Research Institute
- Meinzen-Dick, R., J. Behrman, P. Menon, and A. Quisumbing. 2012. "Gender: A Key Dimension Linking Agricultural Programs to Improved Nutrition and Health." In Reshaping Agriculture for Nutrition and Health, edited by S. Fan and R. Pandya-Lorch, 135–144. Washington, DC: International Food Policy Research Institute.
- Messer, E. 1997. Intra-household allocation of food and health care: current findings and understandings-introduction. Social Science & Medicine. 44: 1675-84.
- Ministry of Health and Population (Nepal), Department of Health Services. (2009) Annual Report 2065/66 (2008/2009).
- MoAD (2012) Statistical information on Nepalese Agriculture. Ministry of Agriculture Development, Singh Durbar, Kathmandu, Nepal.
- MoAC (2010). National Agriculture Sector Development Priority (NASDP) for the Medium- Term (2010/11 - 2014/15), Ministry of Agriculture and Cooperatives, Government of Nepal, June
- Moser, C. O. (1989). Gender planning in the Third World: meeting practical and strategic gender needs. World development, 17(11), 1799-1825.
- Nepal Agriculture Research Council (NARC). (2010). NARC's Strategic Vision for Agricultural Research (2011- 2030)-Meeting Nepal's Food and Nutrition Security Goals Through Agricultural Science and Technology. Kathmandu: Nepal Agricultural Research Council.
- Nepal Demographic and Health Survey 2011, Ministry of Health and Population, Nepal, New ERA, and ICF International, Calverton, Maryland.
- Nepal Global Health Initiative Strategy. 2010. www.ghi.gov/whereWeWork/docs/NepalStrategy.pdf.
- Nepal Planning Commission (NPC), Central Bureau of Statistics (CBS) (2013) "Nepal Thematic Report on Food Security and Nutrition 2013".
- National Planning Commission (NPC). (2007). Three Year Interim Plan (2007/8-2009/10). December. Kathmandu: NPC. Government of Nepal.
- MoAC (Ministry of Agriculture and Co-operatives). (2009). Statistical Information on Nepalese Agriculture. Kathmandu, Nepal

- MoAC (Ministry of Agriculture and Cooperatives) (2005). Statistical information on Nepalese agriculture. HMG/Nepal. Pp167-331.
- Nepal, MoHP (Ministry of Health and Population) (2012); New ERA; and ICF International Inc. Nepal Demographic and Health Survey (NDHS) 2011. Kathmandu, Nepal: MoHP, New ERA, and ICF International.
- Nyyssöla, M., 2007. Women's status and children's food security in Nepal. Research Paper No. 2007/84. Helsinki: United Nations University-World Institute for Development Economics Research.
- Osei, A., Pandey, P., Spiro, D., Nielson, J., Shrestha, R., Talukder, Z., ... & Haselow, N. (2010). Household food insecurity and nutritional status of children aged 6 to 23 months in Kailali District of Nepal. Food & Nutrition Bulletin, 31(4), 483-494.
- Pant, B. R., 2008. Women and Nutrition in Himalayan Region: A Case Study. ENVIS Bulletin on Himalayan Ecology 16(1), 18-27.
- Paolisso, M., K. Hallman, L. Haddad, and S. Regmi. 2002. Does cash crop adoption detract from child care provision? Evidence from rural Nepal. Economic Development and Cultural Change 50 (2): 313–37.
- Prasad, S. K., Pullabhotla, H., & Kumar, A. G. (2011). Supply and Demand for Cereals in Nepal 2010-2030. Report prepared for the Cereals System Initiative for South Asia (CSISA), Discussion Paper, 1120.
- Paudel, L. N., Meulen, U., Wollny, C., Dahal, H., & Gauly, M. (2009). Gender aspects in livestock farming: pertinent issues for sustainable livestock development in Nepal. Livestock Research for Rural Development, 21(3).
- Raut, N., Sitaula, B. K., & Bajracharya, R. M. (2010). Agricultural intensification: linking with livelihood improvement and environmental degradation in mid-hills of Nepal. Journal of Agriculture and Environment, 11, 83-94.
- Raut, N., Raya, B., Sitaula, B. K., Bajracharya, R. M., & Kristjanson, P. (2013). Gender roles and greenhouse gas emissions in intensified agricultural systems in the mid-hills of Nepal.
- Rocheleau, D., & Edmunds, D. (1997). Women, men and trees: Gender, power and property in forest and agrarian landscapes. World development, 25(8), 1351-1371.
- Sah, N., 2005. Determinants of child malnutrition in Nepal: A case analysis from Dhanusha, Central Terai of Nepal. Save the Children Japan-Nepal Office. Kathmandu: Save the Children Japan-Nepal Office.
- Sharma, K. C. (1999), 'Crop Diversification In Nepal', Crop Diversification Project, Ministry of Agriculture, Kathmandu, Nepal
- Shakya, P. M. (2004) Systematic improvement of the efficient of meat industries in Nepal. In: Singh, S. B., Rai, A. K., Sherchand, L., Devkota, N. R., Aryal, I. K., Paudel, S. P. and Tara, P. C. (Editors). Proceedings of the 5th national animal science convention, 15-16 October 2003. Nepal Animal Science Association (NASA), Kathmandu, Nepal.
- Shrestha, R. K. (1992). Agro-ecosystem of the Mid-Hills. In: Abington J B (Editor). Sustainable livestock production in the mountain agro-ecosystem of Nepal. FAO, Rome
- Shively, G., Gars, J., & Sununtnasuk, C. (2011). A Review of Food Security and Human Nutrition Issues in Nepal. West Lafayette (IN): Purdue University Department of Agricultural Economics Staff Paper Series, (11-05).

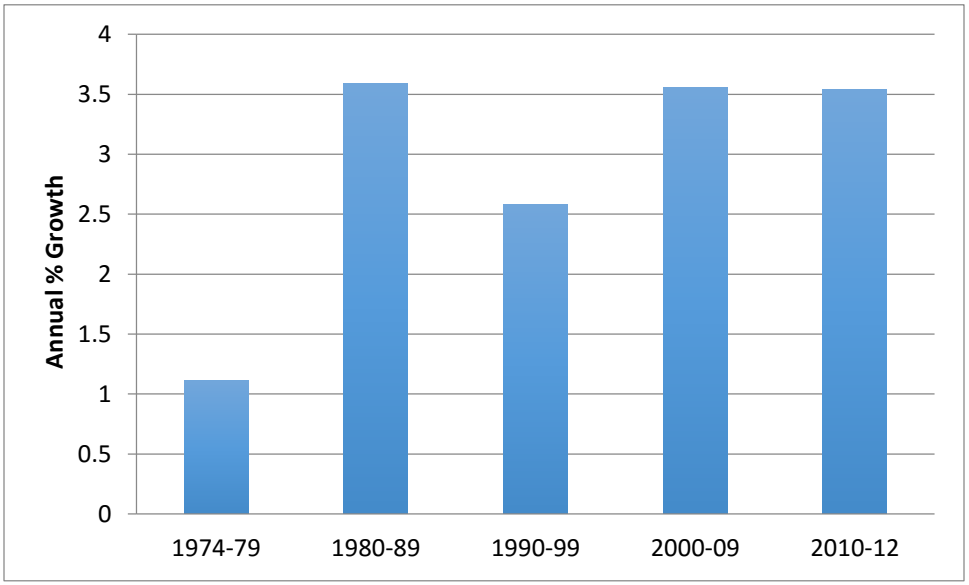
- Singh, S. B., Sedhain, G. K., Banstola, B. R., Khatri, B. B. and Rai, S. K. (2002). Forage and forage seed production area mapping study. The integrated resource management consultancy (IRMC) pvt ltd, Kathmandu, Nepal.
- Smith, L. C., U. Ramakrishnan, A. Ndiaye, L. J. Haddad, and R. Martorell. (2003). The Importance of Women's Status for Child Nutrition in Developing Countries. IFPRI Research Report 131. Washington, DC: International Food Policy Research Institute.
- Stads, G. J., Shrestha, H. K., Manandhar, H. K., & Gao, L. (2006). Nepal. ASTI Country Brief, (37).
- Suvedi, M. P., & Pyakuryal, K. (2001). Evaluation of Nepal's Agricultural Extension. In F. L. Brewer (Ed.), Agricultural Extension Systems: An International Perspective: Courier Customs Publishing, Inc. MA, USA.
- Suvedi, M. P., and McNamara P. (2001). Strengthening the pluralistic agricultural extension system in Nepal. United States Agency for International Development (USAID)
- Thapa, Sridhar. (2004). "Labor force participation in agricultural households in Nepal: a probit model analysis." The Economic Journal of Nepal 27(4): 204-211.
- Thapa, S. (2009). Gender differentials in agricultural productivity: Evidence from Nepalese household data. University of Trento, Department of Economics, Trento, Italy.
- UNICEF (2006). Child and Maternal Nutrition. Situation of Children and Women in Nepal 2006. UN House, Pulchowk, Kathmandu, Nepal: United Nations Children's Fund, Nepal Country Office. p. 113-27.
- UNICEF, 2010. Child poverty and disparities in Nepal 2010: Are we failing our children? UNICEF Global Study on Child Poverty and Disparities. Kathmandu: UNICEF and Government of Nepal National Planning Commission.
- Upadhyay, B. (2005). Women and natural resource management: Illustrations from India and Nepal. In Natural resources forum (Vol. 29, No. 3, pp. 224-232). Blackwell Publishing, Ltd.
- USAID (United States Agency for International Development) Feed the Future. (2010). Feed the Future Nepal FY 2010 Implementation Plan. Washington, DC: USAID Feed the Future.
- USAID (United States Agency for International Development) Feed the Future. (2011). NEPAL FY 2011–2015 Multi-Year Strategy. Washington, DC: USAID Feed the Future.
- Vaidya, A. K., and C. N. Floyd (1997). "From recommendation domains to providing basis for research prioritization and locating representative sites for technology generation and verification in the hills of Nepal. Lumle Agricultural Research Centre." LARC Occasional Paper 97/3.
- Webb, P. (2013). Impact pathways for agricultural research to improved nutrition and health: a literature analysis and recommendation for research priorities. White Pap.
- WFP and NDRI (2010). The Food Security Atlas of Nepal, Kathmandu: National Planning Commission, Government of Nepal
- World Bank, 2010. Nepal overview of childhood malnutrition. Washington, DC: The World Bank.
- World Health Organization (WHO). (2009). Perspectives on sexual violence during early years of marriage in Nepal: findings from a qualitative study: social science research policy briefs.

ANNEX B: List of Figures



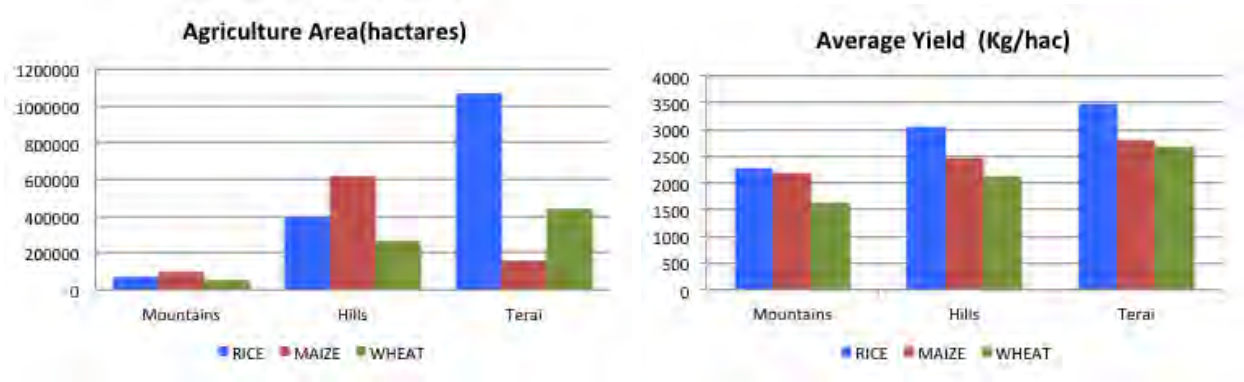
Data source: CBS 2011

Figure 1: Household Income Share (1995-2011)



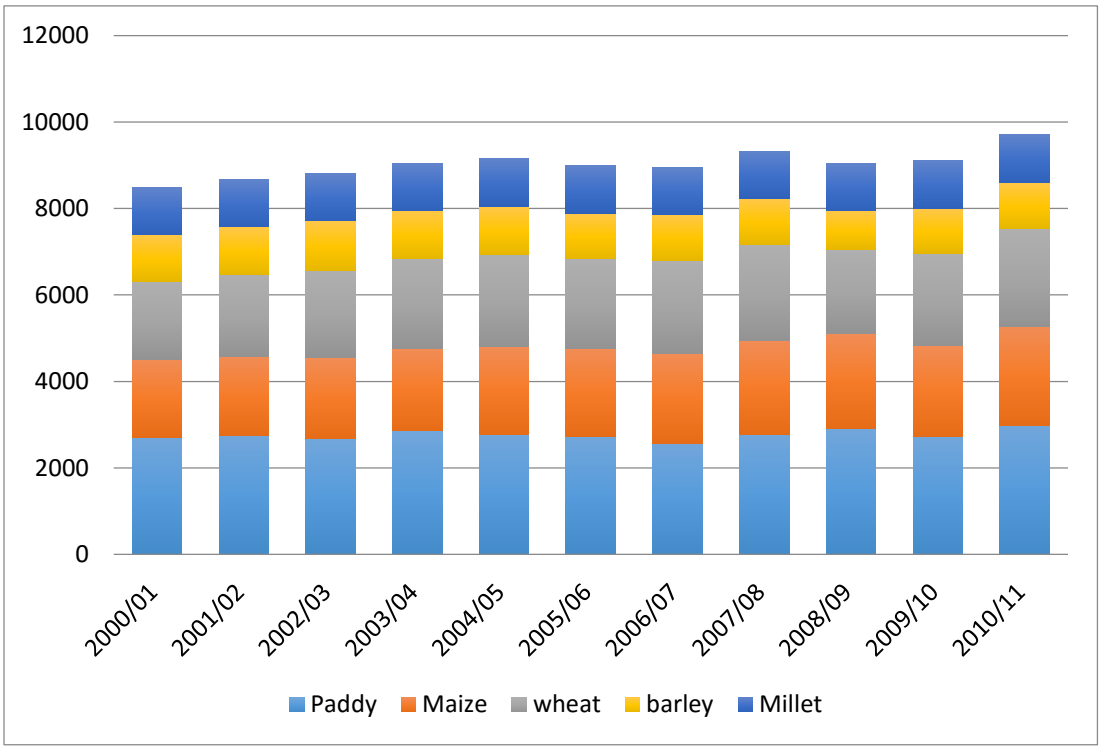
Data source: Basnett and Pandey 2014

Figure 2: Value-added growth in agriculture



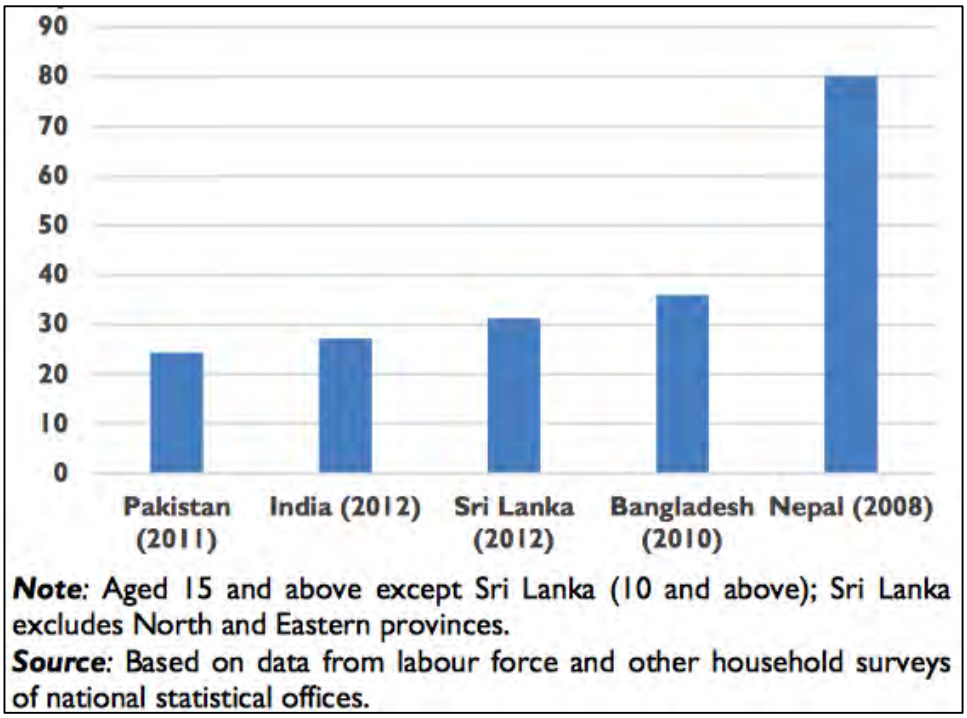
Data source: MoAD 2012

Figure 3: Crop distribution across agro-ecological zones of Nepal



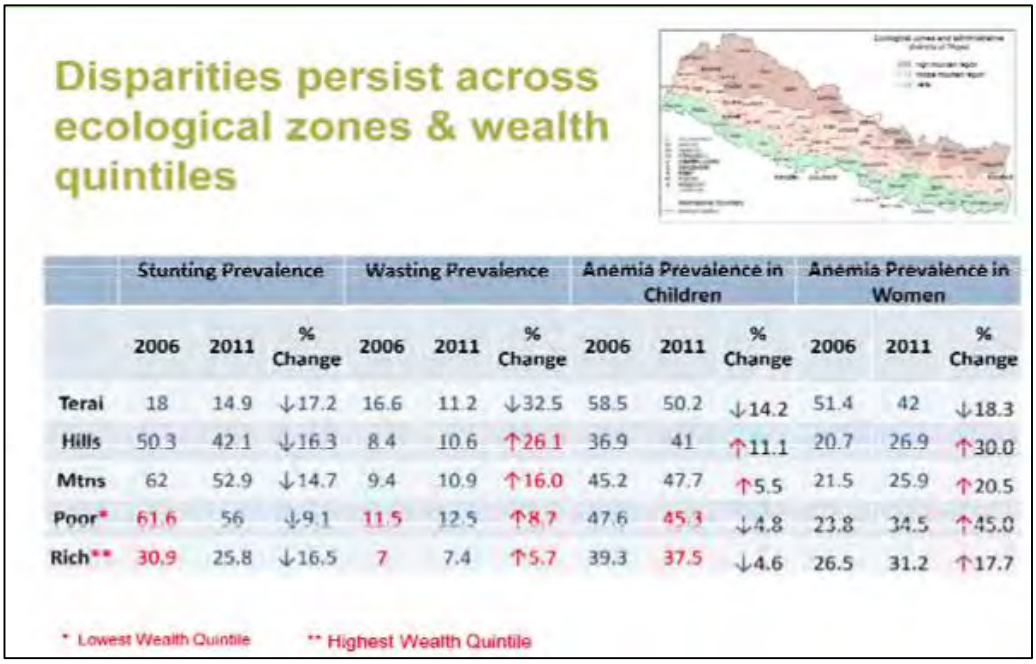
Data source: Ministry of Agriculture and Cooperatives (MoAC), Nepal, 2011; and Deshar 2013

Figure 4: Staple cereal crops of Nepal



Source: ILO 2014

Figure 5: Female labor force participation rate (%)



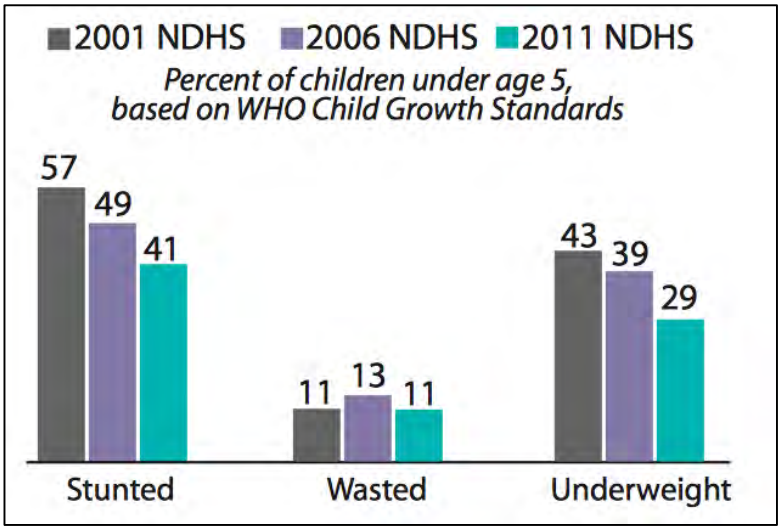
Disparities persist across ecological zones & wealth quintiles

	Stunting Prevalence			Wasting Prevalence			Anemia Prevalence in Children			Anemia Prevalence in Women		
	2006	2011	% Change	2006	2011	% Change	2006	2011	% Change	2006	2011	% Change
Terai	18	14.9	↓17.2	16.6	11.2	↓32.5	58.5	50.2	↓14.2	51.4	42	↓18.3
Hills	50.3	42.1	↓16.3	8.4	10.6	↑26.1	36.9	41	↑11.1	20.7	26.9	↑30.0
Mtns	62	52.9	↓14.7	9.4	10.9	↑16.0	45.2	47.7	↑5.5	21.5	25.9	↑20.5
Poor*	61.6	56	↓9.1	11.5	12.5	↑8.7	47.6	45.3	↓4.8	23.8	34.5	↑45.0
Rich**	30.9	25.8	↓16.5	7	7.4	↑5.7	39.3	37.5	↓4.6	26.5	31.2	↑17.7

* Lowest Wealth Quintile ** Highest Wealth Quintile

Figure 6: Nutrition disparities across ecological zones and wealth quintiles, Source USAID, 2012[57]

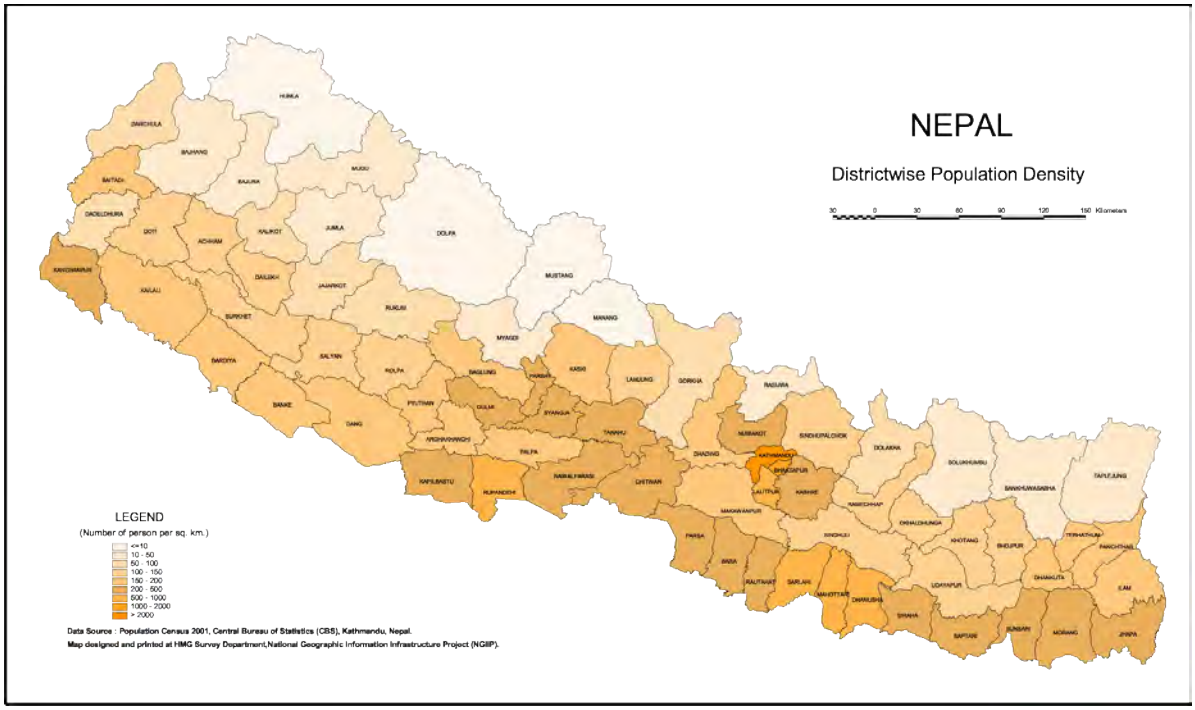
[57] Proceedings from the symposium can be found here: http://pdf.usaid.gov/pdf_docs/pnadz843.pdf

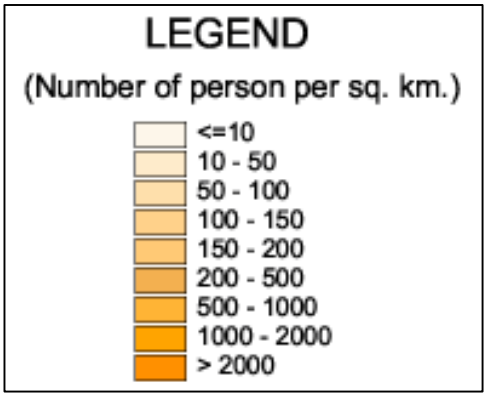


Source: NDHS and MOHP 2011

Figure 7: Trends in Children's Nutritional Status (2006-2011)

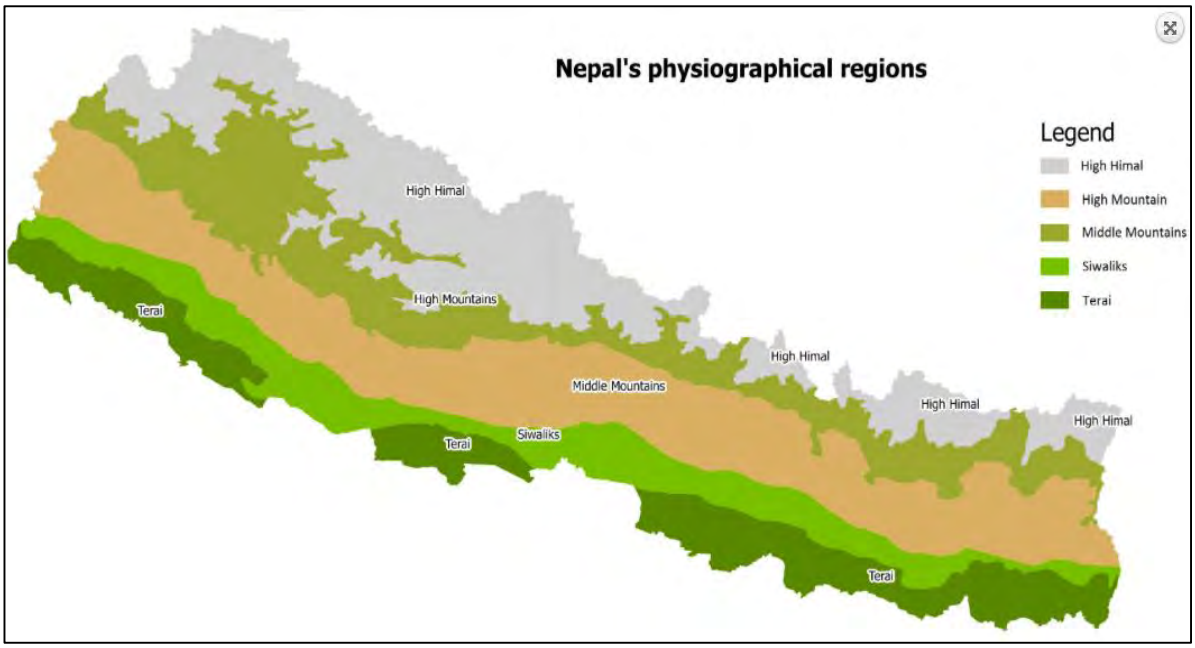
ANNEX C: Maps of Nepal





Data Source : Population Census 2001, Central Bureau of Statistics (CBS), Kathmandu, Nepal.
Map designed and printed at HMG Survey Department,National Geographic Information Infrastructure Project (NGIIP).

Map 1: Population Density by Districts of Nepal

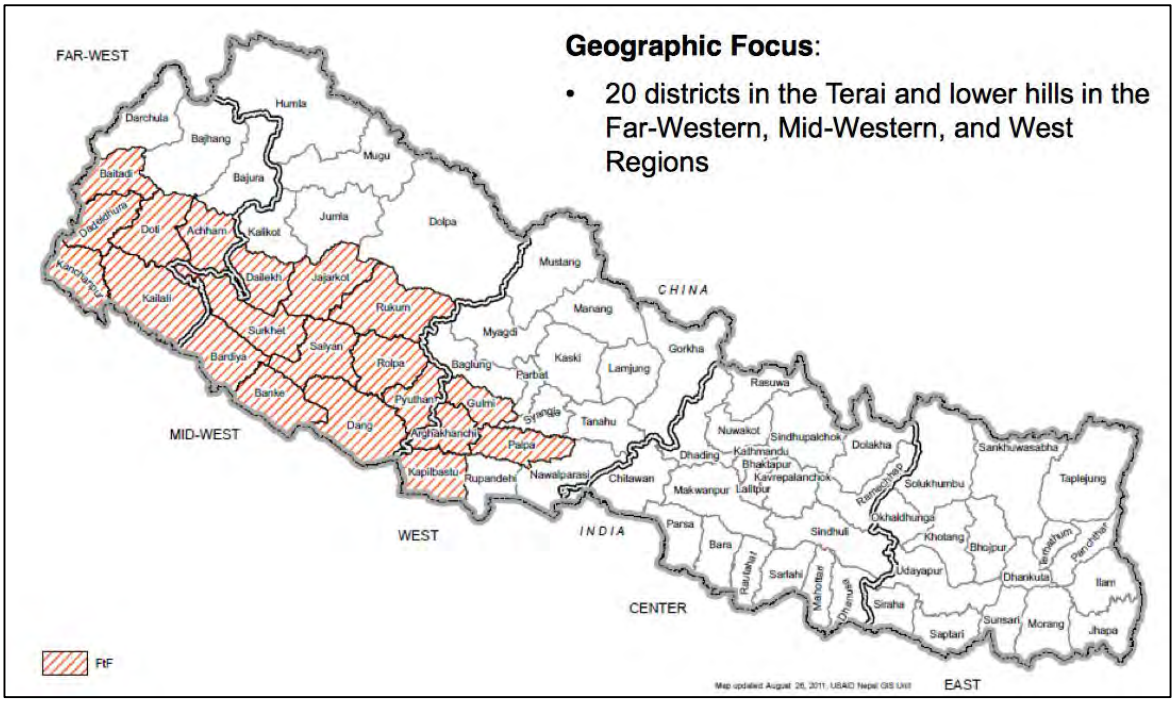


Source: http://lt.umn.edu/earthducation/expedition6/geography/

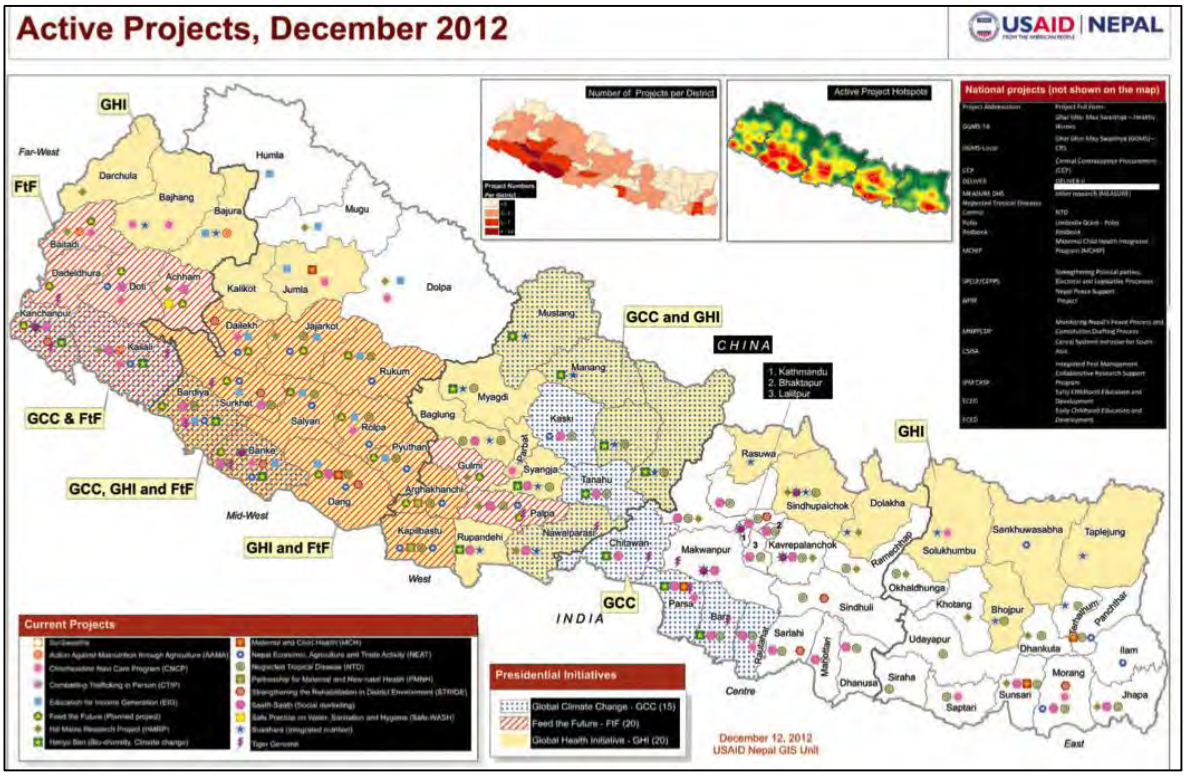
Map 2: Agro-ecological Domains of Nepal

Source: http://lkamal.com.np/blog/image-map-of-nepal-with-marker-on-highlighted-district/#Kaski

Map 3: Districts and Regions of Nepal



Map 4: USAID Feed the Future program districts in Nepal (Source: USAID 2011)



Source: www.usaid.gov/sites/default/files/documents/1861/USAID_Nepal_calendar_2013_downsized.pdf

Map 5: Active USAID projects in Nepal as of December 2012

ANNEX D: INGO Projects with the Ministry of Agriculture and Cooperatives

	Projects/Programmes	**Duration**	**Amount of Assistance (NRs in million/Annum)**	**Development Partners / Institutions**	**INGOs**
1	Nepal Nutrition Intervention Project: Sarlahi	2003 - 2010	42,931	USA	John Hopkins University
2	Poverty Eradication (32 Districts)	2004-2009	372,554	UK	Action Aid Nepal
3	Food Security, Water, Sanitation and Nutritional Assistance				
4	Poverty Alleviation via Housing and Micro-Finance (Jhapa, Morang, Mahottari, Kailali, Kaski, Surkhet, Dhanusha, Kabhre, Lamjung, Bara and Ilam districts)	2005 - 2010	16,730	USA	Habitat for Humanity International
5	Mainstreaming people with disabilities into disaster management (Kathmandu, Kanchanpur, Dang, Baglung, Gorkha, Palpa, Nawalparasi, Sarlahi and Morang districts)	2005 - 2011	77,070 (for three projects)	France	Handicap International
6	Improving Livelihood Security of Socially Excluded Communities in Nepal, Integrated Approaches to Improving the Urban Environment in Asia, Main streaming Livelihood-Centered Approaches to Disaster Management (Doti, Kailali, Surkhet, Banke, Rupandehi, Nawalparasi and Chitwan districts)	2006 - 2010	92,690 (for three projects)	UK	Intermediate Technology Development Group
7	Access to Opportunities and strengthen Local Capacities in Integrated Sustainable Waste Management in Small and Medium Municipalities of Nepal (Gorakha, Achham, Kalikot, Chitwan, Tanahun, Surkhet and Banke districts)				

8	Sustainable Agriculture with market for Advancing Livelihoods of Conflict Affected Poor people (Doti, Kailali and Achham districts)				
9	Terai Arc Landscape Program, Himalayan Landscape Program and Northern Mountains Conservation (36 Districts)	2006 - 2011	10,000	USA	World Wildlife Fund
10	Community Based Multi Hazard Risk Reduction Program (Kabhre, Udayapur, Sindhuli, Lalitpur, Kathmandu and Bhaktapur districts)	2007 - 2009	16,473	Denmark	Danish Red Cross Society
11	Disaster Preparedness and Sustainable Livelihood Development Project (Chitwan district)	2007 - 2009	3,617	Japan	Shalpa Neer
12	Poverty Reduction through the organization of Farmers (Saptari, Siraha and Dhanusha districts)	2007 – 2010	6,377	USA	International Development Enterprise, Nepal
13	Increasing Access of Poor Nepali Communities to Biogas Technology to Strengthen Livelihoods and Enhance Environment Management (Dailekh, Surkhet, Salyan, Gorakha, Sindhupalchok and Dolakha	2007 - 2010	1,114	USA	Winrock International
14	Karnali Support Programme (Water and sanitation, long-term food security and capacity building) (Mugu and Humla districts	2007 - 2012	3,478	Denmark	Mission East
15	Community Based Management of Acute Malnutrition Project (Surkhet, Dailekh, Mugu, Kalikot, Jumla, Dolpa, Humla, Jajarkot and Bardiya districts)	2008 - 2009	115,231	Ireland	Concerned Worldwide
16	Rights Based Safe Migration and Disaster Risk Reduction Program : 15 Districts	2008 - 2010	7,668	Denmark	Dan Church Aid

17	Forestry Extension Service in Central Terai (Dhanusha, Mahottari and Sarlahi districts)	2008 - 2010	6,408	Denmark	Danish Forestry Extension
18	Fostering Health and Livelihoods of Conflict Affected People in Nepal (11 districts)	2009 - 2012	2,824	UK	The Britain Nepal Medical Trust

Source: Global Agriculture and Food Security Program (GAFSP) (2010)[58]. Statement of Technical and Other Assistance, FY 2009/10, Ministry of Finance, Government of Nepal.

[58] Table assessed from:
http://www.gafspfund.org/sites/gafspfund.org/files/Documents/Nepal%204%20of%209%20Country%20Investment%20Plan.pdf

ANNEX E: NGOs Providing Agricultural Extension and Service in Proposed Feed the Future Districts[59]

District	Major NGO/CBO in the district	Implementing Partner	Links
Baitadi	Rural Environment Development Center (REDC)		https://www.facebook.com/redc.dadeldhura1999
	Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED)		http://www.ceapred.org.np
	Environment, Culture, Agriculture, Research and Development Society (ECARDS) Nepal		http://www.ecards.org.np
Dadeldhura	CEAPRED		
	Micro-Enterprise Development Program (MEDP)	UNDP, Australian Aid	http://www.medep.org.np
	Fintrac	USAID	http://www.fintrac.com
Kanchanpur	Rural Reconstruction Nepal (RRN)		http://www.rrn.org.np
	Support Foundation		
	Local Initiatives for Biodiversity, Research and Development (LIBIRD) Nepal		www.libird.org/
Kailali	Lutheran Nepal	WFP, United Nations High Commissioner	https://nepal.lutheranworld.org

[59] Table modified from Suvedi and McNamara 2011.

		for Refugees (UNHCR)	
	CEAPRED Nepal; ECARDS Nepal		
Doti	Center for Disease Control and Prevention (CDC) Nepal		http://www.cdc.gov/globalhealth/countries/nepal/
	CEAPRED		
	CYMMIT/Hill Maize Research program	Swiss Agency for Development and Cooperation (SDC)	http://hmrp.cimmyt.org
Achham	CEAPRED, Sebak Nepal, ECARDS Nepal		
	Rural Development Center (RDC)	UNICEF, UNDP, ILO	http://www.rdcnepal.org
Bardia	PLAN International Nepal		https://plan-international.org/where-we-work/asia/nepal/
	RRN		
	Education for Income Generation Project (EIG) Nepal	USAID, Winrock International	http://alliance.com.np/usaidnepals-education-for-income-generation-eig-program-in-nepal/
Surkhet	CEPREAD, EIG/USAID, RRN, MEDP		
Dailekh	Everest Club, SEBAK Nepal		
	Hospital and Rehabilitation Center for Disabled Children		http://www.hrdcnepal.org

	(HRDC)		
	Forum for Rural Welfare and Agricultural Reform for Development (FORWARD)	USAID, Winrock International, ILRI, UKAID, IFAD, World Bank	http://forwardnepal.org
	Link Helvetas	HELVETAS Swiss Intercooperation	http://nepal.helvetas.org/en/our_projects/link.cfm
Jajarkot	GTZ Poverty Alleviation in Selected Rural Areas (PASRA), Nepal		
	Link Helvetas, CEPREAD, Nepal		
Banke	FORWARD Nepal, CEAPRED, PLAN International		
Salyan	MEDP, EIG, CEAPRED	USAID	
Rukum	United Mission to Nepal (UMN) Rukum Cluster		
	CEAPRED		
	Nepal Economic, Agriculture, and Trade Activity (NEAT)	USAID	http://borgenproject.org/tag/neat/
Dang	LIBIRD Nepal, EIG, NEAT	USAID	
	Rural Women Development Association		
Kapilbastu	FORWARD Nepal, LIBIRD Nepal		

	Green Savings and Credit Cooperative Ltd.		
Palpa	Rural Economic Development Association (REDA)		https://www.facebook.com/pages/Rural-Economic-Development-Association-Nepal/298601956870298
	Society for Research in Child Development (SRCD)		http://www.srcd.org/about-us
	International Development Enterprise (IDE) Nepal	USAID, UKAID, UNICEF	http://www.idenepal.org
Gulmi	IDE, Nepal LIBIRD Nepal		
	Naba Prabhat Youth Association		
Arghakhanchi	Sustainable Community Development Center (SCDC)		
	District Coffee Producers Association (DCPA)		
	CEPREAD		