

खाद्य तथा पोषण सुरक्षा पुस्तिका

२०७७



खाद्य सुरक्षा तथा खाद्य प्रविधि महाशाखा
कृषि तथा पशुपन्छी विकास मन्त्रालय
सिंहदरबार, काठमाडौं
आषाढ, २०७७

खाद्य तथा पोषण सुरक्षा पुस्तिका २०७७

सम्पादन

डा. हरि बहादुर के.सी.
श्री विष्णु हरि देवकोटा



खाद्य सुरक्षा तथा खाद्य प्रविधि महाशाखा
कृषि तथा पशुपन्छी विकास मन्त्रालय
सिंहदरबार, काठमाडौं
आषाढ, २०७७

बिषय सुची

दुई शब्द	४
१ नेपालको कृषि क्षेत्र र खाद्य तथा पोषण सुरक्षा स्थितिको विश्लेषण बिष्णु हरि देवकोटा र डा. हरि बहादुर के.सी.....	५
२ शिक्षा, विज्ञान तथा प्रविधि मन्त्रालय र विद्यालय दिवा खाजा कार्यक्रम डा. भोजराज काफ्ले	१५
३ बलियो नेपाल र पोषण प्रवर्धन कार्यक्रम: एक जानकारी चेतना पन्थी.....	१८
४ हेल्भेटास नेपालको पहल: हिमाली क्षेत्र कृषि पर्यावरण तथा पोषण प्रवर्धन परियोजना सोमाकुमारी राना.....	२१
५ लिबर्ड आयोजनाको प्रयास: वाली विविधताका साथै खाद्य तथा पोषण सुरक्षामा योगदान पिताम्बर श्रेष्ठ, लक्ष्मण खत्री, अनिता गौतम, बिष्णु ढकाल, सागर जि.सि. र भरत भण्डारी	२६
६ बाल बचाउ कार्यक्रम (Save the Children): खाद्य र पोषण सुरक्षा संगसंगै दुर्गा आचार्य	३१
७ खाद्य तथा पोषण सुधारको लागी पारीवारीक खेती: सुआहरा दोश्रो रोजी सुवाल, नारायण प्रसाद तिवारी, निता योगी, रमेश प्रसाद अधिकारी र पूजा पाण्डे राना.....	३५
८ खाद्य तथा पोषण सुधार आयोजना (Food and Nutrition Security Enhancement Project (FANSEP) खाद्य तथा पोषण सुधारका लागी आयोजनाका चुनौती तथा प्रयासहरू प्रद्युम्नराज पाण्डे, परशुराम रिमाल र सन्जिव पण्डित.....	४५

दुई शब्द

खाद्य तथा पोषण सुरक्षा प्राप्तिकालागि विभिन्न नीति तथा कार्यक्रमहरूमार्फत नेपाल सरकारले प्रतिबद्धता जाहेर गरीसकेको नै छ । सहश्राब्धी विकास लक्ष्य तथा दिगो विकास लक्ष्यसँग समाहित भई भोकमरी तथा कुपोषण अन्त्यकालागि अन्तर्राष्ट्रिय जगतसँग ऐक्यवद्धता कायम गरी सोही अनुसार खाद्य तथा पोषण सुरक्षाका लागि विभिन्न गैह्र सरकारी संघ संस्थाहरू तथा आयोजनागत हिसाबमा नै पनि नेपाल सरकार प्रतिबद्ध भई पहल समेत गरेको अवस्था छ ।



। यसै क्रममा निजी, सरकारी र गैह्र सरकारी क्षेत्रसमेत सबैको प्रतिबद्धतामा बहुक्षेत्रीय पोषण कार्यक्रम-२ नेपाल सरकारबाट स्वीकृत भई कार्यान्वयनमा आईसकेको छ । उक्त योजना बमोजिम विभिन्न निकायहरूबाट खाद्य तथा पोषण क्षेत्रमा गरिएका पहलहरू र प्राप्त उपलब्धि तथा सिकाईहरूलाई एकै ठाउँमा समेट्ने प्रयास स्वरूप यस पुस्तिका सम्पादन सहित तयार गरिएको छ । यस संग्रहका लागि जानकारीहरू तयार गरी सहयोग गर्ने सबैलाई धन्यवाद दिन चाहन्छु । यसबाट खाद्य तथा पोषण सुरक्षा क्षेत्रमा काम गर्ने सरोकारवालाहरू सबैलाई उपयोगी सामग्री हुने विश्वास गरेको छु ।

सामग्रीहरूको संकलन तथा सम्पादन कार्यमा संलग्न हुनुहुने यस मन्त्रालयका खाद्य सुरक्षा तथा खाद्य प्रविधि महाशाखाका सह-सचिव डा. हरि बहादुर के.सी., वरिष्ठ कृषि प्रसार अधिकृत बिष्णु हरि देवकोटा लगायत उहाँका समूहका सम्पूर्ण सदस्यहरूलाई हार्दिक धन्यवाद दिन चाहन्छु ।

मिति २०७७।३।१५

राजेन्द्र प्रसाद भारी
सचिव

१. नेपालको कृषि क्षेत्र र खाद्य तथा पोषण सुरक्षा स्थितिको विश्लेषण

विष्णु हरि देवकोटा^१ र डा. हरि बहादुर के.सी.^२

के हो खाद्य सुरक्षा ?

संयुक्त राष्ट्र संघीय विश्व सम्मेलन (World Conference of the United Nation) १९९६ ले खाद्य सुरक्षा (Food Security) लाई प्रत्येक व्यक्तिले सक्रिय र स्वस्थ जीवन यापनका लागि आफ्नो चाहना र आवश्यकता अनुरूप सधैं पर्याप्त, स्वच्छ र पोषणयुक्त खाना माथि भौतिक, सामाजिक र आर्थिक पहुँच भएको अवस्था हो भनी परिभाषित गरेको छ। यस प्रकार सबै मानिसले, सबै समयमा भौतिक तथा आर्थिक रूपले पर्याप्त, सुरक्षित तथा पोषणयुक्त खानामाथि पहुँच गराई उनीहरूको भोजनको आवश्यकता र रोजाईको खाना परिपूर्ति भई सबल र स्वस्थ जीवन जीउन सक्नु भन्ने अभिष्ट विश्व कृषि तथा खाद्य संगठन (Food and Agriculture Organization, FAO) ले गरेको छ। खाद्यान्नको सर्वसुलभ उपलब्धता (Availability), यसको पहुँच (Affordability), उपयोग (Utilization) र स्थिरता (Stability) खाद्य सुरक्षाका महत्वपूर्ण आयाम वा स्तम्भहरू हुन्।

नेपालको अवस्था

International Food Policy Research Institute (IFPRI) द्वारा विश्वका ११३ देशहरू सहित गरिएको एक अध्ययनबाट प्रकाशन गरिएको विश्व भोकमरी प्रतिवेदन (Global Hunger Index 2019) अनुसार नेपालको खाद्य सुरक्षा स्थिति मात्र ४६ स्कोर सहित ७९औं स्थानमा छ। यसबाट नेपालमा भोकमरी अत्यन्त दयनीय अवस्थामा रहेको देखिन्छ। राष्ट्रिय योजना आयोगको १५औं योजनामा उल्लेख भए बमोजिम नेपालमा २१ प्रतिशत जनसंख्याले अझै पनि पर्याप्त खाना खान पाएरहेको अवस्था छैन। जेनेतेन खाद्य आवश्यकताको आधारभूत सुरक्षा स्थितिमा रहेका घरपरिवार (Minimal Food Secure Households) केवल ४८.२ प्रतिशत मात्र रहेको छ। सामान्य मानिसलाई आफ्नो दैनिक क्रियाकलापहरूमा सक्रिय रहनको लागि प्रतिव्यक्ति प्रति दिन न्यूनतम २२०० किलो क्यालोरी (Kilo Calories) शक्ति (Energy) आवश्यक मानिएको छ। विश्व बैंक (World Bank) ले यो परिमाण १८०० किलो क्यालोरी भन्दा कम हुने गरी प्राप्त भएको अवस्थालाई गम्भिर किसिमको खाद्य असुरक्षा (Severe Food Deficit) भनी परिभाषित गरेको छ। विश्व बैंकको यस व्याख्या अनुसार नेपालमा कूल जनसंख्याको ७.८ प्रतिशत जनसंख्या गम्भिर खाद्य असुरक्षित अवस्थामा रहेको देखिन्छ। विश्व बैंकले प्रति व्यक्ति प्रति दिन क्रयक्षमता (Purchasing Power Parity, PPP) ३.२ अमिरीकी डलर भन्दा कम रहेको अवस्थालाई

^१ बरिष्ठ कृषि प्रसार अधिकृत, कृषि तथा पशुपन्छी विकास मन्त्रालय email: bh.devkota@gmail.com

^२ सहसचिव, कृषि तथा पशुपन्छी विकास मन्त्रालय email: kchhari2002@gmail.com

गरिबीको रेखा मुनी रहेको जनसंख्या भनी किटान गरेको छ । यस हिसाबले हेर्ने हो भने नेपालमा झण्डै १५.८ प्रतिशत जनसंख्या गरिबीको रेखामुनी रहेको अनुमान हुन आउँछ ।

खाद्य सुरक्षाको कुरा गर्दा सबैभन्दा मुख्य सवाल खाद्यान्नको उपलब्धता (Food Availability) नै हो । खाद्य उपलब्धताको हिसाबले आ.व. २०७५/७६ मा प्रति व्यक्ति ३८१ के.जी. खाद्यान्न उत्पादन भएको अनुमान छ । यस उत्पादनबाट बीउ, पशु आहार, भण्डारण तथा प्रशोधन नोक्सानी आदि कटाएर प्रति व्यक्ति अनुमानित २४७ के.जी. उपभोगयोग्य खाद्यान्न उपलब्ध हुने अनुमान गर्न सकिन्छ । खाद्यान्न उपलब्धताको यो परिमाण औषत नेपालीका लागि निर्धारण गरिएको दैनिक न्यूनतम आवश्यक शक्ति २२५० किलो क्यालोरी प्राप्तिका लागि पर्याप्त नै हुन आउँछ । यद्यपि खाद्य सुरक्षाका दृष्टिले विश्वव्यापी रूपमा निर्धारण गरिएको मापदण्ड भने सालाखाला २६०० किलो क्यालोरी प्रति व्यक्ति प्रति दिन छ । तसर्थ उत्पादन तथा आपूर्तिको हालको यस परिमाणले दैनिक २२५० किलो क्यालोरी प्राप्तिका लागि पर्याप्त देखिएतापनि खाद्य सुरक्षाका दृष्टिले २६०० किलो क्यालोरी प्राप्त हुने अवस्था निकै टाढा छ । यसका लागि हालको मुख्य मुख्य खाद्यान्न बालीहरु जस्तै: धान, मकै र गहुँको उत्पादनमा झण्डै दोब्बर जस्तो वृद्धि गर्नु जरुरी हुन्छ ।

कुपोषणको वर्तमान अवस्था

नेपाल जनसंख्या तथा स्वास्थ्य सर्वेक्षण २०१६ (Nepal Demographic and Health Survey 2016) बमोजिम पाँच वर्ष मुनिका बालबालिकाहरु मध्ये ३६ प्रतिशत बालबालिकाहरुमा पुङ्कोपन (Stunting) छ । यसका अतिरिक्त २७ प्रतिशत बालबालिकामा न्यून तौल (Underweight) र ९.७ प्रतिशतमा ख्याउटेपना (Wasting) छ । पाँच वर्षमुनिका बालबालिकाको अधिक तौल तथा मोटोपना (Obesity) २.१ प्रतिशत छ । प्रजनन उमेरका महिलाहरुमा अधिक तौल र मोटोपना (Obesity) २२ प्रतिशत र दीर्घ रूपमा शक्तिको कमी भएका (Chronic Energy Deficiency Measured by Body Mass Index-BMI) प्रजनन उमेरका महिलाको संख्या १७ प्रतिशत रहेको छ । त्यसै गरी नेपाल राष्ट्रिय सुक्ष्मपोषकतत्व सर्वेक्षण २०१६ (Nepal National Micronutrient Survey 2016) बमोजिम ३२ प्रतिशत किशोरकिशोरीहरुमा भोकमरीको जोखिमका कारण पुङ्कोपना (Stunting) देखिएको छ । साथै २३ प्रतिशत किशोर र १४ प्रतिशत किशोरीमा दुब्लोपना (Wasting) देखिएको अवस्था छ । ५३ प्रतिशत बालबालिकाहरुको मृत्युको अप्रत्यक्ष कारण कुपोषण (Malnutrition) रहेको छ ।

विश्व पोषण प्रतिवेदन २०१६ अनुसार पोषणमा गरिएको लगानीबाट १६ गुणासम्म प्रतिफल प्राप्त हुने अनुमान गरिएको छ । साथै विश्व बैंकको प्रतिवेदन २०१८ बमोजिम कुपोषणका कारणले एसिया र अफ्रिकाका गरिब देशहरुका कूल ग्राहस्थ उत्पादन (Gross Domestic Products) मा ११ प्रतिशत सम्म नोक्सानी हुने देखाएको छ । यस प्रकार सरसर्ति हेर्दा देशमा भोकमरी र कुपोषणको अवस्था अझै पनि चिन्ताजनक देखिन्छ ।

खाद्यान्न उपलब्धता:

धान, मकै, गहुँ, कोदो, जौ र फापर नेपालका प्रमुख पाँच खाद्यान्न बालीहरू हुन् । आर्थिक वर्ष २०७५/७६ मा नेपालको कूल वार्षिक खाद्यान्न उत्पादन एक करोड छ लाख आठ हजार मेट्रिक टन पुगेको छ । यस उत्पादनबाट बीउ, जर्ती, पशु आहार, भण्डारण तथा प्रशोधन नोक्सानीआदि परिमाण कटाएर झण्डै ७३ लाख १२ हजार मे. ट. उपभोगयोग्य खाद्यान्न प्राप्त हुने अनुमान छ । माथी भनिए जस्तै प्रति व्यक्ति प्रति दिन २२५० किलो क्यालोरी शक्ति प्राप्तिमा लागि प्रति व्यक्ति प्रति वर्षकरिब २०१ के.जी. प्रशोधित खाद्यान्न आवश्यक पर्ने हुन्छ । वर्ष २०७६ का लागि हाम्रो देशको प्रक्षेपित जनसंख्या (Projected Population) २ करोड ९४ लाख ९४ हजार ८२५ अनुमान गर्दा वार्षिककरिब ५६ लाख १९ हजार मेट्रिक टन प्रशोधित खाद्यान्न आवश्यक हुन आउँछ । यस अर्थमा खाद्यान्न उपलब्धता र आवश्यक परिमाणका हिसाबले हामी झण्डै १६ लाख ९३ हजार मेट्रिक टन बचत (Net Food Saving) मा नै देखिन्छौ । तर खाद्य उपलब्धताबाट मात्र खाद्य सुरक्षाको सुनिश्चतता प्रत्याभूत भने हुन सक्दैन । राष्ट्रिय तह (National Level) मा १६ लाख ९३ हजार मे. ट. खाद्यान्न बचत देखिएता पनि पारिवारीक तह (Household Level) मा करिब २१ प्रतिशत नेपालीहरू अझै दैनिक निर्धारित क्यालोरी (२२५० किलोक्यालोरी) को न्यूनतम मात्रा भन्दा कम खाद्यान्न उपभोगको अवस्थामा छन् । देश भित्रको असन्तुलित उत्पादन र वितरणले करिब २१ जिल्लाहरू खाद्य असुरक्षा कै अवस्थामा छन् । तराई कै केही उर्वर जिल्लाहरू जस्तै: रौतहट, चितवन आदि आफ्नै उत्पादनले खान पुग्ने अवस्थामा देखिदैनन् । अत्याधिक जनसंख्याको चाप रहेका उपत्याकाका जिल्लाहरू काठमाडौं, भक्तपुर र ललितपुर समेतमा जिल्ला भित्रकै आफ्नै उत्पादन प्रयाप्त हुने कुरै भएन । भिन्न भूगोलमा हुने यस प्रकारको असन्तुलित उत्पादनका कारण झण्डै ५ लाख ६९ हजार मेट्रिक टन खाद्यान्नको समुचित वितरण व्यवस्था देशका लागि सधैँ टाउको दुखाई बनेको छ ।

विगत एक दशकको अवधि आर्थिक वर्ष २०६६/६७ देखि आर्थिक वर्ष २०७५/७६ सम्म महाभूकम्पको विपत्ति वर्ष २०७३/७४ बाहेक अन्य अवधिमा देशमा खाद्य संञ्चिति कै अवस्था देखिन्छ । यद्यपि यस अवधिमा खाद्य संञ्चित नै रहेता पनि तथ्याङ्कहरूले चामलको आयात(Imports) भने अनपेक्षित बढीरहेको देखाएकोछ । भन्सार विभागको तथ्याङ्क अनुसार आर्थिक वर्ष २०७५/७६ मा ३२ अरब ५९ करोड रुपैयाँ बराबरको धान चामल आयात भएको देखिन्छ । यो तथ्याङ्क अधिल्लो आर्थिक वर्ष २०७४/७५ भन्दा करिब ३ अरब ६ करोडले बढी हो । आ.व. २०७४/७५ मा २९ अरब ५३ करोड बराबरको आयात भएको देखिन्छ । त्यसै गरी आ.व. २०७३/७४ मा भने २३ अरब ८७ करोड बराबरको मात्र आयात भएको देखिन्छ । गत आ.व. २०७६/७७ को अवधिमा भने रु. १० अरब ४० करोड बराबरको तिन लाख ४६ हजार मे. ट.

धान तथा रु २३ अरब १७ करोड बराबरको ४ लाख ४० हजार मे.ट. चामल गरी कूल रु. ३३ अरब ५७ करोड बराबरको धान चामल आयात भएको देखिन्छ ।

केन्द्रीय तथ्याङ्क विभागको प्रतिवेदन Nepal Annual Household Survey 2016/17 अनुसार चामल खास गरी मसिनो चामल (Fine Rice) को उपभोग बढ्दो क्रममा छ । प्रतिवेदनमा प्रति व्यक्ति प्रतिवर्ष मसिनो चामल (Fine Rice) ४३.० के.जी., मोटा चामल (Coarse Rice) ६८.९ के.जी. तथा चिउरा (Beaten Rice) ५.९ के.जी. गरी औषत एक व्यक्तिले ११८ के.जी. चामल उपभोग गर्ने गरेको तथ्याङ्क सार्वजनिक भएको छ । पहिलो देखि पाँचौ धनाद्य वर्ग (First to Fifth Wealth Quintile) सबैमा उच्च दरमा मसिनो चामलको उपभोग दर वृद्धि भईरहेको पाईएको छ । पाँचौ धनाद्य वर्ग (Fifth Wealth Quintile) मा त मोटा चामलको उपभोग उच्च दरमा घटेको देखिएको छ ।

११८ के. जी. चामल प्रति व्यक्ति प्रतिवर्ष उपभोगको हिसाबले हेर्दा आर्थिक वर्ष २०७५/७६ का लागि हाम्रो अनुमानित जनसंख्या २,९४,९४,८२५ का लागि झण्डै ३४ लाख ८० हजार ३८९ मे.ट. चामल आवश्यक पर्ने देखिन्छ । जबकी हाम्रो उत्पादन ५६ लाख १० हजार मे.ट. बाट बीउ, जर्ती, पशु आहार, भण्डारण तथा कुटानी नोकसानी आदि कटाए पश्चात् केवल ३१ लाख २३ हजार २२७ मे. ट. को हाराहारीमा मात्र चामल प्राप्त हुन सकेको देखिन्छ । यसबाट करिब करिब तीन लाख ५७ हजार मे. ट. चामल अपुग भई विदेशबाट आयात गर्नु नै पर्ने अवस्था सिर्जना हुन्छ । कूल खाद्यान्नमा चामलले ५० प्रतिशत हिस्सा ओगटेको हाम्रो मुलुकमा कृषि क्षेत्रले कूल गार्हस्थ उत्पादन (Gross Domestic Products) मा केवल २७ प्रतिशत अर्थात् ५ खर्ब ८० अरब बराबरको मात्र योगदान पुर्‍याएको छ । कूल गार्हस्थ उत्पादनमा धानको मात्रै १३ देखि १७ प्रतिशत योगदान छ । नेपालीहरू वैदेशिक रोजगारप्रति आकर्षित हुन थालेपछि हलो र जुवाहरूमा खिया लाग्न थालेका छन्। गोरु र गोठ सुनसान भएको छ । भकारीबाट झिकेर खाइने धान, चामलको साटो बोरामा पसलबाट अन्न आउन थालेको छ तर हाम्रो उब्जनशील खेत र माटोहरू बाँझै छन् ।

पशुजन्य पदार्थको योगदान

खाद्य तथा पोषण सुरक्षाका दृष्टिले विज्ञानले सुझाए बमोजिम मानिसलाई दैनिक आवश्यक पर्ने कूल क्यालोरीको ७० प्रतिशत हिस्सा वनस्पतिजन्य पदार्थ (Plant Based Sources) र बाँकी ३० प्रतिशत पशुपन्छीजन्य पदार्थ (Animal Based Sources) बाट आपूर्ति हुनु पर्ने हुन्छ । तर हाम्रो दैनिक आवश्यक क्यालोरीको आपूर्ति यस बमोजिम भईराखेको छैन । प्रति दिन प्रति व्यक्ति २२५० किलो क्यालोरीको ८७.३ प्रतिशत अर्थात् १९६४ किलो क्यालोरी खाद्यान्न अर्थात् वनस्पतिजन्य पदार्थबाट र बाँकी १२.७ प्रतिशत दूध, दही, पनीर, माछा, मासु, अण्डा आदि जस्ता पशुपन्छीजन्य पदार्थबाट

प्राप्त भएको देखिन्छ । यस हिसाबले खाद्य तथा सन्तुलित पोषण सुरक्षाका लागि पशुपन्छीजन्य पदार्थको (Animal Based Products) उत्पादन र आपूर्ति कार्यमा झनै प्राथमिकताका दिनुपर्ने देखिन्छ ।

दैनिक आवश्यकता र आपूर्ति:

कृषि तथा पशुपन्छी विकास मन्त्रालय, खाद्य प्रविधि तथा गुण नियन्त्रण विभागले Nepalese Food Composition Table, 2017 प्रकाशनमा ल्याएको छ । यस अनुसार मानिसलाई सन्तुलित भोजनको लागि दैनिक आवश्यक पर्ने विभिन्न समूहका खाद्य बस्तुहरूको परिमाण उल्लेख गरेको छ । खाद्य प्रविधि तथा गुण नियन्त्रण विभागका अनुसार प्रति व्यक्ति प्रति दिन अन्नबाली (Cereals) ४००-६०० ग्राम, दाल (Pulses) ७५-९० ग्राम, हरियो तथा अन्य तरकारी (Green Leafy and Other Vegetables) २५०-३५० ग्राम, कन्दमुल (Tubers and Potatoes) ७५-१०० ग्राम, फलफूल (Fruits) १०० ग्राम, दूध र दूधजन्य पदार्थ (Milk and Milk Products) २००-३०० ग्राम, माछामासु (Fish and Meat) ३० ग्राम तथा अण्डा (Eggs) ३० ग्राम आवश्यक पर्ने उल्लेख छ । यस हिसाबले हेर्ने हो भने हाम्रो उत्पादनले अन्नबाली, कन्दमुल र तरकारीको आवश्यकता मात्र पूर्ति हुने अवस्था छ । दलहन, फलफूल, मासु, दूध र अण्डामा हामी अझै आत्मनिर्भर बन्न सकेका छैनौं । प्रति व्यक्ति प्रति दिन ७५-९० ग्राम दाल अर्थात् गेडागुडी (Pulses) चाहिनेमा हाम्रो आपूर्ति मात्र ३५ ग्रामको हाराहारीमा छ । त्यसै गरी फलफूलमा हाम्रो उत्पादनले करिब १०९ ग्राम प्रति व्यक्ति प्रति दिन मात्र आपूर्ति हुने अवस्था छ । त्यस्तै दूध र दूधजन्य पदार्थ ७३ ग्राम र अण्डा दैनिक करिब ८ ग्राम (वार्षिक ५५ गोटा) मात्र उपलब्ध छ ।

खाद्यान्नमा पहुँच (Affordability):

विश्व भोकमरी प्रतिवेदन (Global Hunger Index) २०१९ अनुसार खाद्य सुरक्षा स्थिति मापनका लागि चार मुख्य सूचकहरू (Indicators) निर्धारण गरिएका हुन्छन् । १. पहुँच अर्थात् किन्न सक्ने क्षमता (Affordability) २. उपलब्धता (Availability) ३. खाद्य बस्तुको स्वस्थता तथा गुणस्तर (Quality and Safety) र ४. प्राकृतिक श्रोत साधनहरूको अनुकूलन (Natural Resource and Resilience) । यी ४ मुख्य सूचकहरू भित्र पुनः विभिन्न उपसूचकहरू (Sub Indicators) संलग्न भएका हुन्छन् । प्रत्येक उपसूचकहरूलाई अंकभार १०० मा मूल्याङ्कन गरिएको हुन्छ । यस्ता उपसूचकहरूमा जति धेरै अंक (स्कोर) प्राप्त हुन सक्छ त्यति नै खाद्य सुरक्षाका स्थिति बलियो भएको मानिन्छ । विश्व भोकमरी प्रतिवेदन (Global Hunger Index, 2019) अनुसार वर्ष २०१८ का लागि नेपालले Affordability अन्तरगत ४१.६, Availability अन्तरगत ४९.१, Quality and Safety अन्तरगत ४८.२ र Natural Resource and Resilience अन्तरगत ५७.७ अंक सहित औषत ४६.० अंक प्राप्त गरेको अवस्था छ । कूल ४६.०

अंक सहित खाद्य सुरक्षा स्थिति मापन (Global Hunger Index) मा हामी ७९औं स्थानमा छौं । मात्र ४६.० अंकको न्यून स्कोरले हाम्रो खाद्यान्न उपलब्धता, किन्न सक्ने क्षमता (अर्थात् पहुँच), उपलब्ध खाद्यान्नको गुणस्तर र प्राकृतिक श्रोत साधन माथिका अनुकूलन सबै चारै सूचकहरू कमजोर देखिएका छन् । उपरोक्त सूचकहरू मध्ये पनि पहुँच अर्थात् Affordability अन्तरगत सबैभन्दा कम अर्थात् ४१.६ अंक मात्र प्राप्त भएको अवस्था छ । Affordability अन्तरगतको एक उपसूचकमा उल्लेख भए अनुसार नेपालीहरूको आफ्नो सम्पूर्ण पारिवारिक कमाई (Household Income) को झण्डै ४३.९ प्रतिशत खर्च (Expenditure) खाद्य बस्तु (Food Items) खरिदमा मात्रै खर्च हुने गरेको तथ्याङ्क उल्लेख गरेको छ । Nepal Annual Household Survey 2016/17 को प्रतिवेदन अनुसार त खाद्य बस्तुमा हुने यस्ता खर्च हाम्रो आम्दानीको झण्डै ५२ प्रतिशतसम्म नै हुने उल्लेख गरेको छ । यस प्रकार बढ्दो महँगो (Inflation) र कमजोर क्रयशक्ति (Poor Purchasing Power) का कारण अतिविपन्न परिवारले शरीरलाई चाहिने क्यालोरी अनुसारको खाना खान पाएको अवस्था छैन ।

खाद्य बस्तुहरूको असन्तुलित योगदान

खाद्य सुरक्षाका हिसाबले धान, गहुँ, मकै, कोदो, फापर र जौ गरी ६ओटा बालीहरूलाई मुख्य खाद्यान्न बाली (Main Stable Food Crops) मानी आएको अवस्था छ । तर खाद्य सुरक्षामा उपरोक्त ६ ओटै बालीकोयोगदानमा भने ठूलो असन्तुलन देखिन्छ । Nepal Annual Household Survey 2016/17 अनुसार प्रति व्यक्ति प्रतिवर्ष चामल करिब ११८.० के.जी., मकै १७.६ के.जी., गहुँ २१.० के.जी., कोदो ३.५ के.जी., फापर ०.१ के.जी. र जौ ०.१ के.जी. मात्र उपभोग हुने गरेको तथ्याङ्क सार्वजनिक गरेको छ । यस हिसाबले कूल वार्षिक करिब ३४ लाख ८० हजार मे.ट. चामलको आवश्यक हुन जान्छ भने हाम्रो उपलब्धता मात्र ३१ लाख २३ हजार मे.ट. छ । चामलको सन्दर्भमा हाम्रो उत्पादनले मात्र उपभोग धान्न सकेको अवस्था देखिदैन । तर यसको ठिक विपरित बाँकी अन्न बालीहरूमा उत्पादनको ठूलो परिमाण मुख्य खाना (Main Stable Food) को रूपमा उपभोग नभई अन्य प्रयोजनका लागि प्रयोग हुन पुगेको देखिएको छ । जस्तो की प्रति व्यक्ति प्रतिवर्ष २१ के.जी. गहुँ उपभोगको दरले हामीले ६ लाख १९ हजार मे.ट. को हाराहारीमा मात्र उपभोग गर्छौं भने उपभोगका लागि यसको आपूर्ति भण्डै १६ लाख ५८ मे.ट. छ । त्यसै गरी मकै १७.६ के.जी. प्रति व्यक्ति प्रतिवर्ष उपभोगको दरले ५ लाख १९ हजार मे.ट. मात्र उपभोग भएको देखिन्छ । जबकी उपभोगयोग्य मकैको आपूर्ति भण्डै २२ लाख ६७ हजार मे.ट. छ । कोदो, फापर र जौ को सन्दर्भमा पनि यस्तै यस्तै दृश्य देखिन्छन् । कोदो २ लाख ४७ हजार मे.ट. आपूर्ति मध्ये १ लाख मे.ट. को हाराहारीमा मात्र उपभोग भएको देखिएको छ ।

आपूर्ति र उपयोगको यस गणितलाई गहिरीएर हेर्ने हो भने चामलमा हाम्रो उत्पादनले भण्डै ३ लाख ५७ हजार मे.ट. को दरले उपभोग धान्न सकिरहेको छैन । गहुँ र मकैको सन्दर्भमा भने ठूलो

परिमाण झण्डै १० लाख ३९ हजार मे.ट. गहुँ र १७ लाख ४८ हजार मे.ट. मकै मुख्य खाद्यान्न (Main Stable Food) भन्दा बाहिर प्रयोग हुन पुगेको वास्तविकता छ । मुख्य खाद्यान्न भन्दा बाहिर प्रयोग हुने परिमाण कोदोमा १ लाख ३० हजार मे.ट. तथा फापरमा ६ हजार मे.ट. को हाराहारीमा अनुमान गरिएको छ ।

धान: खाद्य सुरक्षाको मुख्य आधार

खाद्य सुरक्षाको हिसाबले सबैभन्दा मुख्य सवाल खाद्यान्नको उपलब्धता नै हो । यसका लागि धान सबैभन्दा धेरै उत्पादन गर्नुपर्ने हुन्छ । प्रति ईकाई जमिन, श्रम, वा पूँजी लगानीको हिसाबले धान बाहेकका धेरै बालीहरू विकल्प हुन सक्दछन् । तर जब खाद्य सुरक्षाको सवाल आउँछ, धानको ठाउँमा चिया लगाउने हो भने खाद्य सुरक्षाको विषयलाई सम्बोधन नगरी अन्तै रुमल्लिइरहेका हुनेछौं । पर्याप्त खाद्य सुरक्षा अनुभूतिका लागि धानको हालको उत्पादनलाई एक तिहाइले बृद्धि नगरी सुखै छैन । यसका लागि आयोजनागत हिसाबले नै प्रयासहरू हुनु अनिवार्य छ । हालै प्रधानमन्त्री कृषि आधुनिकीकरण परियोजना र चैते धान र वर्षे धानका मिसन कार्यक्रमहरू पनि सञ्चालनमा ल्याइएका छन् । धान उत्पादनमा दोब्बर बृद्धिको लागि सिँचाइ सुविधा बिस्तारको साथ साथै आधुनिकीकरण र व्यवसायीकरणको जरूरत देखिएको छ । बहुक्षेत्रिय पोषण योजना २ ले योजना अवधिको अन्तिम वर्ष आ.व. २०७९/८० मा खाद्य वस्तुको उत्पादन ४२२ के.जी. प्रतिवर्ष प्रतिव्यक्ति पुर्याउने लक्ष्य राखेका छ । धानबाली केन्द्रीत ठोस पहल गरी प्रतिवर्ष प्रतिव्यक्ति खाद्यान्नको हालको उत्पादन ३८१ के.जी. बाट सहजै ४२२ के.जी. प्रतिवर्ष प्रतिव्यक्ति पुर्याउन उचित प्रयास हुन पर्ने देखिन्छ ।

सुक्ष्म पोषक तत्वका कुराहरू

सुक्ष्म पोषक तत्वहरू (Micronutrients) खास किसिमका शारीरिक प्रकृया र अंगहरूको उचित विकास र सञ्चालनका लागि अनिवार्य हुन्छन् । सहज शारीरिक र मानसिक विकासका लागि यस्ता पोषक तत्वहरू नभै हुँदैनन् । आइरन (Iron), क्याल्सियम (Calcium), भिटामिन ए (Vitamin A), जिङ्क (Zink), आयोडिन (Iodine), भिटामिन वि१२ (Vitamin B12), फोलेट (Folate), थायमिन (Thiamin), नियासिन (Niacin), भिटामिन सि (Vitamin C) र भिटामिन वि६ (Vitamin B6) मुख्य गरी हाम्रो लागि कमी देखिएका सुक्ष्म पोषक तत्वहरू हुन् । युनिसेफ (UNICEF) २०१९ को एक प्रतिवेदनमा उल्लेख भए अनुसार नेपालमा २ देखि २३ महिना बीचका बालबालिकाहरूमा आइरनको कमी उच्च छ भने क्याल्सियम, जिङ्क, आयोडिन र भिटामिन वि१२ को कमी पनि मध्यम देखि उच्च दरमा नै छ । पोषणकै विषयमा थप कुराहरू गर्दा ३६ प्रतिशत बालबालिका (६ देखि २३ महिना) ले मात्र न्यूनतम स्वीकार्य खाना (Minimal Acceptable Diet) खान पाएका छन् । स्वास्थ्य तथा पोषणका लागि

अन्न, गेडागुडी, दूध, अण्डा, माछामासु जस्ता पशु उपजहरू, सागसब्जी र फलफूल गरी विभिन्न समूहका खाद्य बस्तुहरू दैनिक सन्तुलित मात्रामा उपभोग गर्नु पर्ने हुन्छ । तर झण्डै ५३ प्रतिशत हाम्रा बालबालिकाहरू पर्याप्त मात्रामा यस बमोजिमको न्यूनतम् खाद्य विविधिकरण (Minimal Dietary Diversity) बाट बञ्चित छन् । घरधुरीका हिसाबले न्यूनतम् खाद्य विविधता प्रयोग गर्ने परिवार केवल १३ प्रतिशत मात्र छन् । दुईवर्ष मुनिका ३० प्रतिशत बालबालिकाहरूले आफ्ना अभिभावकको व्यस्तता वा अज्ञानताका कारण उचित समय र मात्रामा खाना खाई रहनु पर्ने निर्धारित (Minimal Meal Frequency) बमोजिम खाना खान पाइरहेको अवस्था छैन ।

International Food Policy Research Institute (2016) को एक प्रतिवेदन अनुसार सन २०१२ मा सुक्ष्मपोषक तत्व (Micronutrients) र भिटामिन डि (Vitamin D) को कमीले मात्र नेपालमा कूल ग्राहस्थ उत्पादन (Gross Domestic Products) को २-३ प्रतिशत अर्थात् २५०-३७५ मिलियन अमिरिकी डलर बराबरको नोक्सान भएको जनाएको छ । त्यसै गरी गर्भवती महिलाहरूमा आयोडिनको कमीबाट प्रतिवर्ष दुईलाख भन्दा बढी मानसिक रूपले अपाङ्ग (Mentally Deformed) बच्चाहरू जन्मिने गरेको तथ्य सार्वजनिक गरेको छ । विश्व पोषण प्रतिवेदन २०१६ अनुसार पोषणमा गरिएको लगानीबाट १६ गुणासम्म प्रतिफल प्राप्त हुने र कुपोषणकै कारणले नेपाल जस्ता गरिब देशहरूमा कूल ग्राहस्थ उत्पादनमा ११ प्रतिशतसम्म नोक्सानी हुने अनुमान विश्व बैंकले गरेको छ ।

पत्रु खाना (Junk Food)को बढ्दो उपभोग

२१ औं शताब्दीमा आइपुग्दा व्यवसायिक उत्पादनका यस्ता पत्रु खाना (Junk Food) पोषणविद्हरूकोलागि टाउको दुखाई बनेका छन् । पोषण सुरक्षाकोलागि काम गर्दै आएको एक अन्तर्राष्ट्रिय संस्था, हेलेन केलेर इन्टरनेशनलको अनुसार काठमाडौं उपत्यकाको १२ देखि २३ महिना भित्रका ८० प्रतिशत बालबालिकाहरूले यस्ता व्यवसायिक उत्पादनका पत्रु प्याकेट खानाहरू (Commercial Snack Food) जस्तै: चाउचाउ (Noodles), बिस्कुट (Biscuits), क्याण्डी (Candy and Chocolates), चिनी मिश्रित सिरियल्सहरू (Infants Cereals), प्याक गरिएको फलफूलको रसायनयुक्त रस (Fruits Juices) तथा पेय पदार्थहरू (Cold drinks) खाने गरेको पाईएको छ । यस्ता असुरक्षित र अस्वस्थ खाद्य बस्तुहरूको सेवन यति भयङ्कर छ की बालबालिकाहरूका लागि आवश्यक पर्ने दैनिक शक्ति (Calorie) को २५ प्रतिशत शक्ति यस्तै न्यून गुणस्तरका व्यवसायिक उत्पादनका पत्रु खानाबाट प्राप्त हुने गरेको देखिन्छ । व्यवसायिक उत्पादनका यस्ता प्याकेट खाना तथा पेय पदार्थहरूमा हुने उच्च मात्रामा चिनी (High Sugar Content) को अंश, स्याचुरेटेड ट्रान्सफ्याट (Saturated Trans-Fat) र हानिकारक सोडियम (Sodium) को मिसावटले गर्दा बालबालिकाहरूको शारिरीक र मानसिक विकासका लागि नभै नहुने पोषक तत्वको उपलब्धतामा अवरोध (Obstacles) पुर्याउछन् ।

अस्वस्थकर प्याकेट खाना तथा पेय पदार्थहरूले बालबालिकाहरूका शरीरमा माथि उल्लेख गरिएका प्रायः जसो सबै सुक्ष्म पोषक तत्वहरूको उपलब्धता र क्रियाशीलतालाई निस्तेज गरिदिन्छन् । अस्वस्थकर प्याकेट खाना तथा पेय पदार्थहरूले वयस्कहरूमा मोटोपना (Obesity) बढाउँछ । मुटुरोग (Heart Diseases), दम (Asthma), मधुमेह (Diabetics), दुर्बलता (Weakness), उच्च रक्तचाप (High Blood Pressure), ट्युमर (Hyperplasia) तथा रक्तअल्पता (Anemia) जस्ता समस्याहरू निम्त्याउँदछन् ।

निष्कर्ष र गन्तव्यः

नेपालको सन्दर्भमा चामल र खाद्य सुरक्षा एक अर्काको पर्यायवाची जस्तै भएका छन् । चामल अर्थात् धान उत्पादन बढी भयो भने खाद्य सुरक्षा मजबुत हुनपुग्दछ र धानको उत्पादन घट्यो भने खाद्य सुरक्षा लर्बराउछ । कूल क्यालोरी आपूर्तिको हिसाबले आधा भन्दा बढी योगदान ओगटेको र प्रायः सबैले सबै अवस्थामा रूचाईएको बस्तु चामलको उत्पादन र आपूर्तिमा जोड दिनु पर्दछ । आफ्नो ईच्छा, चाहना र रोजाई बमोजिमको पर्याप्त मात्रामा खाना खान पाउनु हामी सबैको संविधान प्रदत्त हक हो । चामलको आपूर्ति र उपलब्धता बिना खाद्य सुरक्षाको अभिष्ट प्राप्ति मुस्किल प्रायः देखिन्छ । मजबुत खाद्य सुरक्षाका लागि हालको धानको उत्पादनलाई एक तिहाइले बृद्धिगर्नु पर्ने हुन्छ । यसकोलागि आयोजनागत हिसाबले नै प्रयासहरू हुनु अनिवार्य छ । मौसम अनुकूलित खेती प्रविधिको विकास र अनुसन्धान जरूरी छ ।

खाद्य तथा पोषण सुरक्षाको हिसाबमा गहुँ, कोदो र फापर जस्ता बालीहरूको योगदान अझै मूलधारमा आउन सकेको अवस्था छैन । उत्पादित गहुँका ठूलो परिमाण मुख्य खाद्यान्नको रूपमा सदुपयोग नभई चाउचाउ, बिस्कुट, मैदा, मिठाई, आदि जस्ता विभिन्न व्यापारिक उत्पादनहरूमा उपयोग भइरहेको अनुमान छ । कोदो, फापर, आदिबाट विशिष्टिकृत खाना (Novel Nutritious Food Item) कसरी तयार गर्न सकिन्छ भनी विशिष्टिकृत परिकार (Novel Food Menu) विकास गर्न अझै सकिएको छैन । यसको लागि अध्ययन, अनुसन्धान, प्रचार प्रसार र चेतना अभिवृद्धि गर्नु जरूरी छ ।

पोषण सुरक्षाका हिसाबले तुलनात्मक रूपले कम शिक्षित आमाहरू, दम्पतिको पहिलो बच्चा (First Borne Child), जन्मदैं तौल कम भएका बच्चाहरू, खास समुदाय र तिनमा रहेका परम्परागत मान्यताहरू (Cultural Taboos), गरिवी र न्यून आय भएका परिवारहरू, स्वास्थ्य तथा कृषि प्रसार सेवामा पहुँच कमभएका परिवारहरू, खाद्य विविधता (Food Diversity) तथा रैथाने बालीहरूको कम उपलब्धता भएका भूगोल तथा क्षेत्रहरू पोषण सुधारका क्षेत्रमा देखिएका खास खास चुनौतीहरू हुन् । १५ औं योजनामा उल्लेख भए अनुसार न्यूनतम् खाद्य विविधता प्रयोग गर्ने घरधुरी केवल १३ प्रतिशत मात्र छ । विषादी (Pesticides) र एन्टिबायोटिक (Antibiotics) जस्ता बस्तुहरूको जथाभावी

बढ्दो प्रयोग र यस सँगसगै यस्ता अस्वस्थ खाद्य बस्तुको उपभोग बढ्दो छ । पत्रु खाना र पेय बस्तुहरूका उत्पादन, विज्ञापन, बिक्री वितरण र उपभोगमा नियमन र नियन्त्रण गर्न सकिएको छैन ।

पशुजन्य उत्पादनहरू जस्तै: दूध, अण्डा, माछा, मासु आदिको सिमित आपूर्ति छ। पोषण सुरक्षा र आवश्यकताका दृष्टिले पशुजन्य उत्पादनहरू खास गरी दूध, अण्डा र माछाको योगदान पर्याप्त नभएकोले त्यस्ता बस्तुहरूको उत्पादन बृद्धिका लागि खास महत्वका कार्यक्रमहरूमा विशेष प्राथमिकता दिनु पर्ने देखिन्छ । त्यसै गरी आम बालबालिकाहरूको पोषणमा मुख्य गरी आइर्न, क्याल्सियम, आयोडिन र भिटामिन वि१२ कमी देखिएकोले आइर्न, क्याल्सियम, आयोडिन र भिटामिन वि१२ प्राप्तिका बालीहरू (Novel Crops) जस्तै: गाढा हरियो सागपात, चना, केराउका साथै माछा, अण्डा, दूध, आदि पहिचान गरी उत्पादन र आपूर्तिमा राज्यको प्राथमिकता जानुपर्ने देखिन्छ ।

खाद्य तथा पोषण क्षेत्रमा देखिएका उल्लिखित चुनौतीहरू सामनाका लागि कृषि प्रसार सेवा (Agri-extension Services) को पुनर्परिभाषा (Redefinition) सहित सबलिकरण (Strengthen) गर्नु जरूरी छ । हालको कृषि प्रसार सेवालार्इ कृषि तथा पोषण प्रसार (Agriculture and Nutrition Extension) सेवामा रूपान्तरित गर्नु आवश्यक देखिसकिएको छ । सबल, सक्षम र दिगो खाद्य तथा पोषण सुरक्षाको लक्ष्य प्राप्तिका लागि सरकारी, गैह्र सरकारी तथा विकास साझेदारहरूसँगको समन्वय र सहकार्यको कुनै विकल्प देखिदैन । खास जनजाती, वर्ग, समुदाय र भूगोल लक्षित खाद्य र पोषण मैत्री कार्यक्रमहरूको कार्यान्वयनका लागि गैह्र सरकारी तथा विकाससाझेदारहरूसँगको सहकार्य अनिवार्य छ ।

२ . शिक्षा, विज्ञान तथा प्रविधि मन्त्रालय र विद्यालय दिवा खाजा कार्यक्रम

डा. भोजराज काफ्ले^३

शिक्षा विज्ञान तथा प्रविधि मन्त्रालयले नेपालको संविधानको अनिवार्य तथा निःशुल्क आधारभूत शिक्षा, स्वस्थ्य र खाद्य सम्प्रभुताको हक तथा नेपाल समाजवाद उन्मुख राज्यको प्रत्याभूतिलाई सम्बोधन गर्न दिवा खाजा कार्यक्रमलाई महत्वपूर्ण कार्यक्रमको रूपमा अग्रसारित गरेको छ । यस सम्बन्धी भए गरेका प्रयासहरू तल उल्लेख छ ।

➤ "सामुदायिक विद्यालयमा दिवा खाजा मापदण्ड तथा कार्यक्रम सहजीकरण पुस्तिका, २०७६" निर्माण र माननीय मन्त्रिस्तरीय निर्णयका आधारमा जारी कार्यान्वयनमा रहेको छ । यसमा समावेश भएका प्रमुख पक्षहरू

- ❖ दिवा खाजा कार्यक्रमको मूल जिम्मेवार निकाय स्थानीय तह भए पनि र प्रदेश सरकारको पनि यसमा सहयोगी भूमिका रहेकाले स्थानीय सरकार, प्रदेश सरकार र सरोकारवाला निकायलाई कार्यक्रम कार्यान्वयन तथा व्यवस्थापन गर्न सहयोग तथा सहजीकरण गर्ने अभिप्रायले यो मापदण्ड र कार्यविधि तयार गरिएको छ । यसबाट स्वास्थ्य र कृषि क्षेत्रमा काम गर्ने विशेषगरी स्थानीय तहमा र तृणभूमि (Grass root level) हरूका लागि समेत उपयोगी हुने मानिएको छ ।
- ❖ यस मापदण्ड र कार्यविधिले दिवा खाजाको राष्ट्रिय मापदण्ड समेत निर्धारण गरेको छ भने दिवा खाजाको बारेमा जानकारी, समस्या तथा चुनौती, महत्त्व र आवश्यकता, मापदण्ड कार्यान्वयन तरिका र ढाँचा, विभिन्न निकाय र पदाधिकारी तथा समितिहरूको जिम्मेवारी तथा अनुगमन तथा सहजीकरण जस्ता विषयवस्तु प्रस्तुत गरिएको छ ।

तालिका १: दैनिक आवश्यक खाजाबाट आपूर्ति हुनुपर्ने बृहत् र सूक्ष्म पोषक तत्त्वको राष्ट्रिय मापदण्ड अनुरूपको मात्रा

पोषक तत्त्व	दैनिक आवश्यक पोषक तत्त्वको मात्रा(४-९ वर्ष उमेर समूह)	नेपालका बालबालिकाका लागि न्यूनतम दिवा खाजाबाट आपूर्ति हुनुपर्ने पोषक तत्त्वको मात्रा (३०%)
बृहत् पोषक तत्त्व		
क्यालोरी	१८५०	५५५
प्रोटीन	५७	१७
फ्याट (ग्राम)	४८	१४
सूक्ष्म पोषक तत्त्व		
आयोडिन (माइक्रोग्राम)	१२०	३६
आइरन (मिलिग्राम)	१७.८	५.४
जिङ्क	११.२	३.४
भिटाविटामिन ए	३३	११
भिटाविटामिन बि	१२	४.१

^३ उपसचिव, शिक्षा विज्ञान तथा प्रविधि मन्त्रालय

❖ उल्लिखित पोषणस्तरको मात्रा न्यूनतम् मात्र भएकाले सोभन्दा घटी पोषणस्तर नहुने गरी विद्यालय तथा स्थानीय तहले दिवा खाजा आवश्यक परिमाणमा उपलब्ध गराउनुपर्ने छ ।

- विद्यालय क्षेत्र विकास कार्यक्रम, पन्ध्रौं योजनामा शिक्षा खण्ड, शिक्षा ऐन, अनिवार्य तथा निशुल्क शिक्षा ऐन, २०७५ आदि शिक्षा सम्बन्धी नीतिगत दस्तवेजहरुमा विद्यालयमा पोषणयुक्त दिवा खाजा कार्यक्रमलाई उच्च महत्त्व दिएका छन् ।
- पछिल्लो उच्चस्तरीय शिक्षा आयोगको प्रतिवेदन तथा नेपाल सरकारको आ.व. २०७६/७७ को नीति तथा कार्यक्रम र बजेट भाषणमा समेत यसलाई महत्त्वका साथ प्रस्तुत गरिएको छ । जसअनुसार करिब रु. ६ अरब रकम यस शीर्षकमा छुट्ट्याइएको छ । सो रकम शसर्त अनुदानको रूपमा सोझै स्थानीय तहमा वितरण गरिने र त्यहाँबाट व्यवस्थापन हुन्छ ।
- उल्लिखित प्रतिवद्धता वा उद्देश्य हासिल गर्न हाल सम्म कार्यान्वयनमा रहेको खाद्य सामग्री आपूर्ति र नगद प्रवाहमा आधारित गरी दुवै ढाँचाका दिवा खाजा कार्यक्रम सञ्चालनमा रहेको छ । नगदमा आधारित कार्यक्रमबाट ३४ जिल्लाका करिब २२ लाख बालबालिका लाभान्वित हुनेछन् । भने खाद्य सामग्रीमा आधारित कार्यक्रम अन्तरगत मानवीय सूचाङ्कमा कमजोर देखिएका ९ जिल्लाका करिब २ लाख बालबालिका लाभान्वित हुनेछन् । नगदमा आधारित कार्यक्रम सघन रूपमा सबै कक्षा १ देखि ५ सम्मका बालबालिका निर्धारण गरिएको छ ।
- खाद्य सामग्रीमा आधारित कार्यक्रम निश्चित विद्यालयका कक्षा १ देखि ८ का बालबालिकाका लागि निर्धारण गरिएको छ । खाद्य सामग्री आपूर्ति कार्यक्रम यस मन्त्रालय अन्तरगतको शिक्षाका लागि खाद्य कार्यक्रम परियोजनामार्फत विश्वखाद्य कार्यक्रमको सहयोगमा सञ्चालनमा छ ।
- गत तीन वर्षमा नेपालमा विद्यालय खाजा कार्यक्रमको बजेट तीन गुनाले बढेको छ । यस कार्यक्रममा सरकारले क्रमशः लगानी बढाउँदै लगेको छ ।

तालिका २: विद्यालय दिवा खजामा खर्चको प्रवृत्ति

	आ.व. २०१७/१८ (रु.)	आ.व. २०१८/१९ (रु.)	आ.व. २०१९/२० (रु.)
नगदमा आधारित	२२९६५१६९७०.००	२९९३५७१४६०.००	५८४३७५००००.००
खाद्य सामग्रीमा आधारित	४६५०२९८४०.००	४२७१२९७८०.००	३२६३४००८०.००
जम्मा	२७६१५४६८१०.००	३४२०७०१२४०.००	६१७००९००८०.००
शिक्षा बजेटको प्रतिशत	१.६०	२.४९	३.६३
खाद्य सामग्रीमा आधारित कार्यक्रमबाट लाभान्वित विद्यार्थी संख्या	२३६०००	२१८८१५	१७३११४
नगदमा आधारित कार्यक्रमबाट लाभान्वित विद्यार्थी संख्या	२८६३९२	११११२०००	२२२९०००
जम्मा	५२२३९२	१३३०८१५	२४०२११४
सरकारको लगानी प्रतिशत	८३	८८	९५

विकास साझेदारको प्रतिशत	१७	१२	५
विद्यालयका बालबालिकाका लागि दिवा खाजा स्वास्थ्य, शिक्षा, सामाजिक न्याय तथा समानताका पक्षबाट महत्त्वपूर्णमानिन्छ । बालबालिकाको विद्यालयमा पोषणयुक्त खाजा खाने अवसरले स्वास्थ्य राम्रो हुने र सर्वपक्षीय मानवीय क्षमताको विकास हुन्छ । यसले विद्यालयमा बालबालिकाको उपस्थिति बढ्ने र विद्यालय छाड्ने दरमा कमी ल्याउँछ । त्यसैले यो कार्यक्रमलाई नेपाल सरकारले क्रमशः प्राथमिकता दिदै आएको छ ।			

३. बलियो नेपाल र पोषण प्रबर्धन कार्यक्रम: एक जानकारी

चेतना पन्थी^४

1. Project Overview

Baliyo Nepal Nutrition Initiative (Baliyo Nepal) is an autonomous, not for Profit Company established with the ambitious objective of building a National Movement to improve the nutrition of young children in Nepal. The organization is supported by Bill & Melinda Gates Foundation (BMGF) and governed by an independent Board of trusted members from the civil society. We believe that with right nutrition, next generation will attain their full potential and realize their dreams.

According to Nepal Demographic & Health Survey Report 2016, only 35 percent of children between 6-23 months' age are fed with minimum acceptable diet. The report also reveals that micronutrient deficiency is another major challenge. Significant lack of iron and other nutritional deficiencies impairs cognitive development, stunts growth and increases morbidity from infectious diseases.

Reducing malnutrition has long been identified as a pressing need of the country. There has been significant progress in terms of reducing the prevalence of stunting (chronic malnutrition) nationally, which fell to 36% in 2016, down from 57 percent in 2001. Still, the figure is greater than developing countries average of 25 percent. The ambitious goal of reducing malnutrition does not concern nutrition sector alone and it takes combined effort from various nutrition specific as well as nutrition sensitive sectors. Nepal government has formulated Multisectoral Nutrition Plan (MSNP) based on the same and calls for more convergence and complementarity from all sectors outlining role of public-private- partnership (PPP) for successful implementation of the program. It has identified stakeholders like national and international NGOs, private sector agencies, community and civil society organizations to coordinate and participate in the nutrition and food security related advocacy and communication.

Private sector plays a vital role in shaping nation's economy and improving business environment. The necessity to involve private sectors in nutrition movement has been recognized and the establishment of a multiple collaboration between the supply side (manufacturers), the demand side (consumers), and the regulatory side (government) is very crucial. The MSNP II along with several other government plans and policies, and the global nutrition movement (e.g. SUN Business Network) have realized the importance of involving the private sector to address the issues of malnutrition. Moreover, the increasing consumption of processed foods has certainly stressed the roles and importance of private sectors in the Food-Based nutrition intervention movement. It is also very crucial, particularly in LMIC contexts, to capacitate the private sectors to manufacture and sell healthy, yet affordable foods. Thus, engaging the private sectors in development program targeting to improve nutrition certainly creates an opportunity for a shared value. Baliyo Nepal, therefore, strongly urges to streamline private sector in its movement and seeks to bridge the missing link between the nutrition movement and the private sectors, as realized in MSNP II. Baliyo Nepal, through its innovate approach, will fit best to

^४ Assistance Manager, Baliyo Nepal, email: chetana@baliyonepal.com

complement the nutrition plan and bring across players from all the sectors to contribute to improving nutrition.

The broad objective of this nutrition initiative is to complement and contribute to the nutrition goals set out by the national plans and policies which is to reduce malnutrition. In order to pursue this goal, the efforts will be directed towards bringing together key actors – the private sector, government, development agencies, civil society and the people of Nepal at large, so that everyone could connect and collectively fight against the battle of tackling malnutrition. Baliyo Nepal aims to achieve the following concrete objectives:

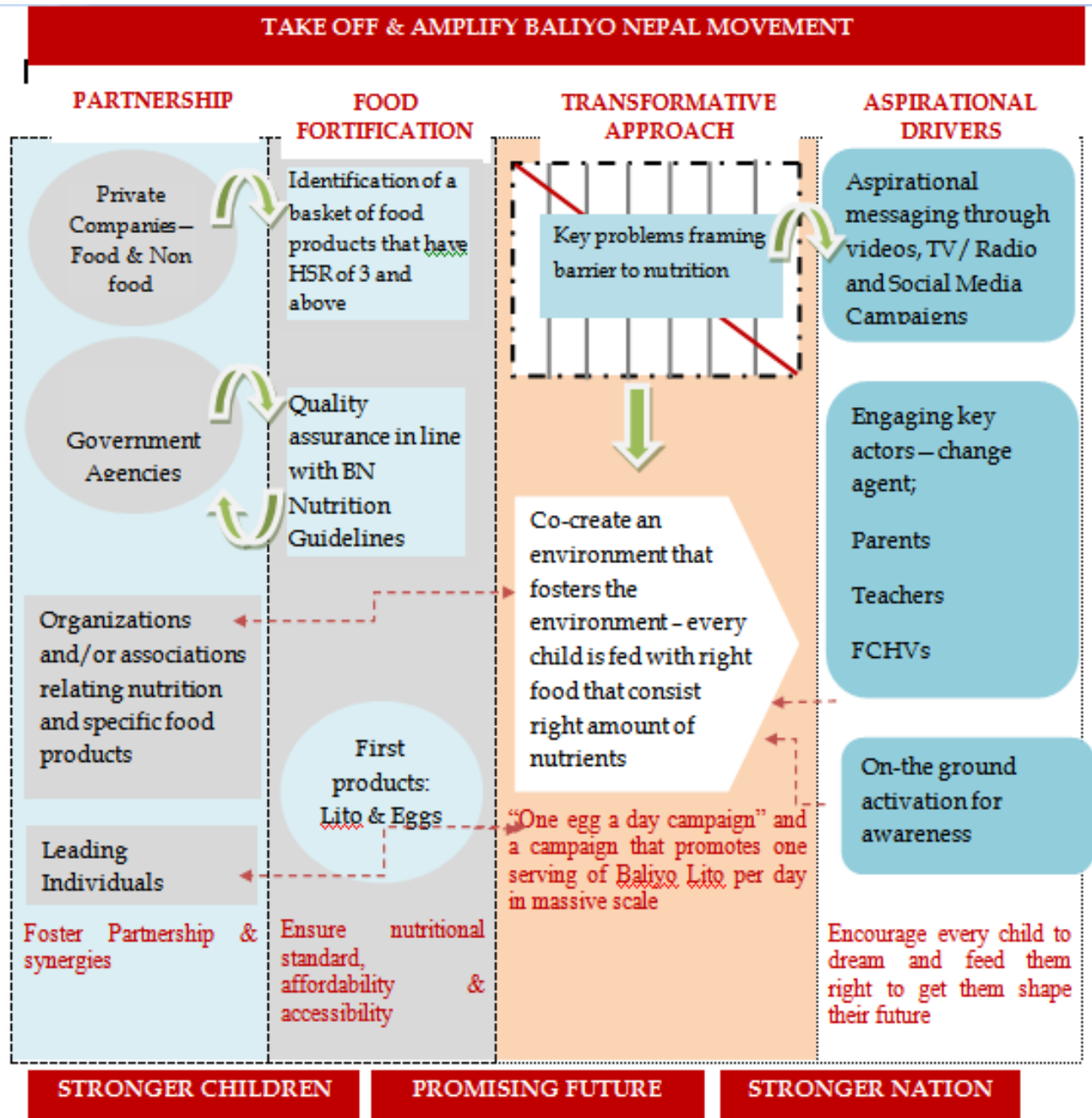
- i. **Create a movement for better nutrition with the aim of engaging the entire nation**
We aim to launch a national campaign & grass-roots level programs with extensive use of social and influencing marketing tools to inspire a national movement and engage every actor across the country and civil society, private sector including the food industry up to the beneficiary levels (end consumers), who can together contribute to trigger behavior change in food consumption habits.
- ii. **Establish higher nutritional standards with the aim of creating a shift in the food industry**
We aim to establish higher nutritional standards and create growth opportunities for products/categories with high/improved nutrition and/or fortified with micronutrients to create a shift in the food industry. In doing so, we will improve the nutritional value of mainstream products sold in Nepal by fortifying staples, highly consumed products, and complementary feeding products in order to significantly impact the nutritional value of the average diet of people, especially, that of lower income populations.
- iii. **Create a brand with the aim of increasing consumer demand for better nutrition**
We aim to create an aspirational brand, thanks to impactful, emotional campaigns and activations that will be instantly recognizable, coveted and synonymous of high, certified nutritional standards. In doing so, we intend to create a shift in consumer demand for products with improved nutrition.

Baliyo Nepal will develop a diversity of programmes to fight the multiple facets of malnutrition. For example, we will work with the food and retail sectors to improve the nutritional value of the food they sell, while making it more accessible and affordable. We are also working with media partners, celebrities, private sectors and NGOs to facilitate access to complementary foods to of 6 to 23 months of age Nepali children. In our current program, the on-ground activation and awareness program will target around 10,000 households in Province 5 of selected areas across 12 districts covering various Municipalities, Rural Municipalities and few Sub Metropolitans. Apart from that, through focused group, we also intend to bring in the whole nation and every citizen of the country to understand the need of the ‘**food that feeds**’ and join the Baliyo Nepal Movement.

2. Project Intervention

Baliyo Nepal’s journey, to building a national movement, started right from November 1, 2019 when Rt. Honorable President Bidhya Devi Bhandari launched Baliyo Nepal Movement. Baliyo Nepal has partnered with other organization to take the movement forward with few organizations already onboard. Post the official launch, an elaborate media event was also held in the sidelines of the SUN global gathering where the partners signed the MoU with Baliyo Nepal and joined hands to fight against malnutrition.

Intervention Model & Process



The movement has just begun and though unique in its approach, Baliyo Nepal integrates each and every aspect relating to and contributing to increase consumption of nutritious food. The program is yet to be implemented while the result to achieve is highly ambitious, but attainable provided it gets the support it calls for. Ultimately, Baliyo Nepal foresees to meeting the goals set by MSNP II and SDGs of bringing down malnutrition- reducing the stunting rate to 24% by 2025 and to 15% by 2030, which is vital to build a healthy generation of human capital.

४. हेल्भेटास नेपालको पहल: हिमाली क्षेत्र कृषि पर्यावरण तथा पोषण प्रबर्धन परियोजना

सोमाकुमारी राना^५

Background

Nutrition in Mountain Agro-ecosystems (NMA) is a multi-country SDC (Swiss Agency for Development and Cooperation) project, through the agency's Global Programme Food Security. The project operates in five mountain ranges: the Himalaya, Hindukush, Pamir-Tian Shan, East-African Highlands and the Andes. It is implemented by IFOAM-Organic International, Helvetas, FiBL and Wageningen University in collaboration with national partners in eight focus countries: Nepal, Pakistan, Kyrgyzstan, Ethiopia, Peru, India, Tajikistan and Ecuador. In Nepal, NMA Phase II is being implemented in selected municipalities of Mugu, Jumla, Kalikot, Dailekh and Jajarkot districts of Karnali Province.

Ending hunger and malnutrition demands a sustainable food production system and resilient, diverse agricultural practices. Numerous impact studies have shown positive effect of ecologically sensitive farming (combining livestock and multiple cropping systems) on household nutrition. Ecologically sensitive farming can also contribute to poverty reduction, particularly in marginal areas such as mountain ecosystems. A systemic approach to ecologically sensitive farming and improved market access for small-scale farmers has had a proven positive impact and has to reach many remote communities. Special facilitation is needed to promote the uptake and adaptation of such technologies at local, national and global level. In this context, NMA focuses on mountain agro-ecosystems in which communities are vulnerable to malnutrition caused by limited crop diversification; poor dietary diversity; insufficient nutrient uptake; poor water, sanitation and hygiene.

After the successful completion of its Phase I (2015-2018), the NMA Phase II (2018-2021) is consolidating proven approaches and bringing to scale interventions and knowledge of Nutrition Sensitive Agriculture (NSA) in mountain areas. It is active at the local level to facilitate demand-oriented replication through the implementation of small projects - Scaling up Nutrition Sensitive Agricultural Interventions (SUNSAIs) and Micro Interventions (MIs), conducted through Rural Service Providers (RSPs) with local expertise in agricultural services. These RSPs mainly provide extension and training services to local communities in various fields including health, agriculture, nutrition, and water.

Goals and Objectives

The goal of NMA is to promote consumption of more diverse diets containing sufficient, safe and nutritious food in mountain areas. The objectives are to increase awareness and household production of nutritious food through the micro interventions at local level, MIs are activities that are implemented by RSPs themselves at the local level, covering small communities within the project's intervention areas. At the national level, the project supports on national policies

^५ National Manager, Nutrition in Mountain Agro-ecosystems (NMA) Project

and action plans and seeks to stimulate diversified production and consumption. For better advocacy on NSA at global level, agro-ecological based diversification particularly in mountain regions is promoted internationally through policies and processes.

Target groups and beneficiaries

The project's target group at local level are the RSPs. They may be government agencies, civil society, local resource persons, activists, female community health volunteers, farmers/farmers' groups/cooperatives, community representatives, business agents, teachers, or others working on relevant areas in mountain communities. Disadvantaged households in rural mountain areas; especially women and children are the primary beneficiaries of the project.

In Nepal, NMA activities are focused in remote parts of Karnali Province where around 55% of children are stunted (NDHS, 2016) and is the district with the highest level of stunting in the country.

Project Intervention: Model, Process, Activities

The RSPs, as identified through the project, are thought of as the vehicle to improved nutritional health of rural communities as they reach and interact closely with farmers in different settings. Their services strongly influence farmers' decision-making in crop and livestock production, forest management and rural households' strategies to improve food security and nutrition⁶.

NMA focuses on Capacity Development Programme (CDP) for the RSPs and implementation of SUNSAIs and MIs. SUNSAIs are projects implemented by RSP institutions which collaborate with local institutions (e.g. municipalities) and helps in production and consumption of nutritious foods. MIs provide insights into the implementation of nutrition sensitive interventions (NSIs) at the local level with impacts directly on small-scale farmers and households in rural areas. They also generate insight and knowledge regarding NSIs. The main activities under NMA Phase II are:

- **Promoting the Mountain Agro- ecosystem Action Network (MAAN):** MAAN is a virtual, social and knowledge network of RSPs interested in nutrition in mountain areas and is a platform for sharing Nutrition Sensitive Agriculture knowledge among MAAN members for mutual benefit of all relevant stakeholders. The link to the MAAN platform is <https://maan.ifoam.bio>
- **Training of Teams of Trainer (ToToT program):** The concept of ToToT aims to equip the teams of trainers with the knowledge and skills on nutrition sensitive initiatives and to disseminate this knowledge further. This should enable them to launch their own capacity development programmes and to have the training programme included in the curricula of their respective institutions. To support the new teams, NMA project partners appointed a team of highly experienced trainers to guide and support the sessions. This included assisting with crafting region-specific capacity development programmes. NMA Nepal organised a ToToT programme of the Himalaya region comprising four teams of trainers - two teams each from Nepal and India. These teams are carrying out capacity development programmes and coaching RSPs in their respective working areas and are affiliated with institutions that handle training and capacity building as part of their institutional mandate.

⁶ GFRAS, 2013, The Integration of Nutrition into Extension and Advisory Services.

- **Capacity development programme for RSPs:** The aim of the capacity development programme is to optimise the implementation of MIs through RSPs and to promote mutual learning about planning and implementation process. Project intervention focuses on tailor-made training, planning workshops, on the job coaching and peer review-based events to reflect the work of the RSPs. Altogether 107 RSPs from different professional backgrounds working on MIs were trained.
- **Scaling-up Nutrition Sensitive Agriculture Interventions (SUNSAIs):** SUNSAIs are projects implemented by RSP institutions (including businesses) to scale up proven nutrition sensitive agriculture interventions (the successful MIs from the previous phase) in collaboration with local institutions (e.g. municipalities, farmer organizations, cooperative, private companies, educational institutions). Altogether ten SUNSAIs received co-funding and coaching from the project to systemically broaden NSA approaches and test the feasibility of replicating previous successful approach. Each SUNSAI promotes production and consumption of nutritious foods to 500-1,000 producers and 5,000-10,000 consumers through awareness raising. They offer success stories and learning that can be used in national and global advocacy work. The SUNSAIs being implemented are divided into five different themes: Agricultural marketing and post-harvest management, Child Care Centre and nutrition, Nutrition education and organic farming, Nutrition awareness and media mobilization and Nutrition enterprise. Besides these, there are more than 100 MIs being implemented by RSPs in different themes in collaboration with local municipalities. The SUNSAIs being implemented by RSP institutions are as follows:

SN	Name of SUNSAI	Geographic areas of implementation	Implementing RSP institutions
1	Local crop production, consumption and marketing	Chhayanath Rara Municipality, Mugu	Women Upliftment and Awareness Centre (WUAC), Mugu
2	High value agriculture inclusive business - HVA IB	Patarasi Rural Municipality, Jumla	Surya Samajik Sewa Sangh (4S), Jumla
3	Extending shelf-life and quality of vegetables through construction of cost-effective post-harvest unit for marketing purpose	Patarasi Rural Municipality, Jumla	Surya Samajik Sewa Sangh (4S), Jumla
4	Nutrition friendly model community childcare center establishment and operation	Dungeshwor Rural Municipality, Dailekh	Everest Club, Dailekh
5	Promoting nutrition and organic farming	Chamunda Bindrasaini Municipality, Dailekh	Fine Smart International Consultancy Pvt. Ltd., Banke
6	School nutrition garden programme	Chhayanath Rara Municipality, Mugu	Women Upliftment and Awareness Centre (WUAC), Mugu
7	Promoting nutrition and organic farming	Raskot Municipality, Kalikot	Group of Helping Hands (SAHAS Nepal), Lalitpur and Pachaljharana Rashtriya Bikash Samaj (PSND), Kalikot

SN	Name of SUNSAI	Geographic areas of implementation	Implementing RSP institutions
8	Our campaign for nutritious food consumption	Bhagawatimai Rural Municipality, Dailekh	Sustainable Agriculture or Environment and Water Source Conservation Centre (SAEWCC), Dailekh
9	Social awakening project for nutrition improvement	Chhedagad Municipality, Bheri Municipality, Shivalaya Rural Municipality; Jajarkot	Hilly Region Development Campaign (HRDC) and Radio Hamro Paila FM, Jajarkot
10	Nutrition mill establishment and operation programme - NMEOP	Narayan Municipality, Dailekh	Jwala Krishi Tatha Pashupalan Udhyog, Dailekh

➤ **Awareness raising about nutrition:** Different activities like media mobilization, training, workshops, product exhibition and virtual programmes were conducted to enhance public relations to raise nutrition awareness and motivate people to consume more diverse and sustainable diets.

➤ **Encourage national stakeholders to engage in an NSA policy setting:** Evidence and learning from SUNSAIs and MIs provides a base for engaging in policy dialogue. Field activities and learnings are shared at the municipal and provincial food security and nutrition coordination meetings as well as different stakeholders' meetings at the national level. The project presented their work at the Scaling Up Nutrition and Global Gathering hosted in Nepal in February 2019. This forum provided an opportunity to share the concept of nutrition sensitive agriculture and proven practices in Nepal to the global participants. Furthermore, two posters namely:

- Improving food and nutrition security of children and women through nutrition sensitive agro-ecological farming practices by mobilizing female health extension workers in mountain areas of Nepal -A case from Raskot Municipality, Kalikot, and
- Promotion of dietary diversity and nutrition through organic manure production – A case from Banke district were presented during the 7th Annual Scientific Symposium on Agriculture to Nutrition: Pathways to Resilience.

Key findings and lessons learned

The nutrition sensitive interventions have attracted the attention of the government, academia, businesses and the general public. The NMA project succeed in connecting the micro interventions at local level with national and global level conversations. The important findings and lesson learned during SUNSAIs and MIs implementation can be presented as:

- Most of the SUNSAIs are co-funded and seem to be well embedded and accepted by the local government, cooperatives and schools. This represents an important means of ensuring their sustainability and local ownership.
- Local level (RSPs, municipalities) have supported farmers and entrepreneurs to engage in NSA through awareness raising on the importance of dietary diversity.
- The integration of concept of agriculture, nutrition and school garden into the school curriculum demonstrates that some MIs are now well-embedded institutionally. The interest of the municipality to scale-up the school garden model through co funding illustrates the impact of the intervention, despite their current small size and budget in Mugu and Dailekh.

- Women ownership in child-care centre and other project activities was very impressive. They aim to open up other child-care centres in Dailekh district.
- As a part of SUNSAI intervention, construction and establishment of post-harvest units and dissemination of information on appropriate technologies for the minimization of quantitative and qualitative post-harvest losses through various IEC materials has raised farmer awareness.
- The success of the project's interventions can be attributed to its people-centred approach where the RSPs are both agents of change and leaders in their community who are able to use their skills and capabilities for the good of many.

Issues, challenges and way forward

Issues and challenges

1. NMA II is working with newly established local governments which have their own set of constraints – some of which relate to limited human resources in numbers, skills and experience and lack of relevant policies and procedures. This demands considerable effort in collaboration and coordination to carry the project forward.
2. Nutrition sensitive initiatives require widespread public participation. It is a challenging task to find a good balance between such public participation and the limited project budget available.
3. Practicing nutrition sensitive agriculture requires time and effort, which is quite difficult to manage through volunteering efforts, such as those provided through RSPs (who only receive funds for specific activities, not for their time).
4. Optimum use of the MAAN mobile app and website is limited in rural areas due to poor access and skills of the people.

Way forward

1. Face to face training and bilateral interactions are the most important means of keeping RSPs engaged and motivated. NMA will carry out capacity building of local government in terms of Nutrition Sensitive Agriculture (NSA).
2. RSP with their MIs will require some funding for building linkages with the line agencies and partners.
3. Joint events must be organised to build linkage and coordination among the private sector, the RSPs and the local governments.
4. The mechanism for regular follow-up and monitoring must be strengthened so that the RSPs and other line agencies are contributing as per the planned MI and other NSA practices.
5. Emphasise on utilization of the knowledge posted on the MAAN platform. Promotional materials like the mobile app, posters, radio programme and website must be brought to public attention, and access improved.

NSA and related practices have to be implemented largely at local level with lobbying and support for the effective planning of at the same time, the continued involvement of Scaling Up Nutrition (SUN) focal points of the government and civil society is important. The project should continue to engage with many stakeholders and larger networks based on the many connections and relationships established – building a truly systematic approach and monitoring it effectively.

५. लिबर्ड आयोजनाको प्रयासः वाली विविधताका साथै खाद्य तथा पोषण सुरक्षामा योगदान

पिताम्बर श्रेष्ठ^७, लक्ष्मण खत्री^७, अनिता गौतम^७, बिष्णु ढकाल^७, सागर जि.सि.^७ र भरत भण्डारी^७

Introduction

LI-BIRD is working in the field of agriculture, biodiversity, natural resources management and climate change related issues. It has envisaged a society where people are resilient, healthy, food secure and live with dignity. Guided by its vision, LI-BIRD has developed a five years' strategy (2017 to 2022) with four programmatic themes namely i) Agriculture Innovations for Food and Nutrition Security, ii) Inclusive Economic Growth for Income and Employment, iii) Community Resilience to Climate Change and iv) Biodiversity and Ecosystem Services for Sustainable Livelihoods. There are a number of projects under each programme theme and all projects either one way or another contributing to achieving food and nutrition security, income and resilience of the people especially resource poor and marginal farm families. LI-BIRD is implementing majority of the food and nutrition security related projects in highly food deficit rural areas, climate vulnerable and disaster-prone communities, landless and land-poor communities and with farmers living in rural-urban interface. In this chapter, we have included threemajor ongoing projects that are directly contributing to improve food and nutrition security of these beneficiaries.

Overview of the projects

i) **Livelihoods and Resilience Enhancement Project:** The overall goal of the Livelihoods and Resilience Enhancement Project (LREP) is to improve food and nutrition security, income and resilience of smallholders, marginalized and resource poor farmers (SMRPF) in western terai and hills of Nepal. The project aims to achieving this goal mainly by improving production of cereal and vegetables through introducing new crop varieties and maximizing the use of the available productive resources; improving home garden; promotion of small livestock such as goat, pig and rabbit; increasing community capacity to adapt to climate change, and reducing risks of disaster by improving safety and security of the served families and communities. The impact groups (target groups) of the project are resource poor, marginalized, landless and smallholder farming households primarily living in below poverty line. In Bardiya and Kailali districts, our primary impact group are *Mukta Kamaiya*, landless, *dalits* and resource poor households. Earthquake affected households in Sindhupalchok and severely food insecure households in Humla are part of the project. Started in June 2019, the project has covered 4,650 households by the end of 2019. More than 60% beneficiaries are women and more than 80% are from resource poor, food insecure and marginalized groups (Table 1).

ii) **Climate Resilient Agriculture Project (CRA):** Promoting conservation and sustainable use of agricultural biodiversity and scaling up of agroecological practices are two important components of the Scaling up Climate Resilient Agriculture for Sustainable Livelihood of Smallholder Farmers in Nepal project. The project will focus on low-external-input based

^७ Local Initiatives for Biodiversity, Research and Development (LI-BIRD) email: pitambar@libird.org

practices in respond to climate change. Started in September 2019, the project is working on achieving three objectives viz. i) diversifying food and income sources of target groups, particularly for women-led and socially marginalized households, ii) increasing adaptive capacities and resilience of vulnerable communities to climate and disaster risks; and iii) contributing to create a favourable policy environment for mainstreaming climate-resilient agriculture in government policies and plan with especial emphasis on local level. The target group of the project are smallholder farmers (farmers having <0.5 ha of land) from marginalized households, particularly women and youths. The project has covered 1800 households in Sindhupalchok and 300 households in Kaski districts (Table 1).

iii) SAMARTHYA: The SAMARTHYA project aims to enhance the adaptive capacity of smallholder farmers, tenants and landless people for improved livelihoods through promotion of climate resilient agriculture-based solutions. This project is being implemented in Siraha, Udaypur and Okhaldhunga districts. The National Farmer Group Federation (NFGF) and National Land Rights Forum (NLRF) are the two keys ‘Strategic Partners’ of the project for coordinating and implementing project activities with technical support from LI-BIRD. In this project, LI-BIRD is also working on developing, demonstrating and promoting innovative and scalable climate resilient models. The project beneficiaries of Samarthya project are the land poor, vulnerable and socially excluded women and adolescent girls.

Table 1: Overview of LI-BIRD projects directly contributing to food and nutrition security

Name of Project	Funding Agency	Duration	Geographical Coverage*	Type of Beneficiary	Number of Households Covered
Livelihoods and Resilience Enhancement Project (LREP)	The Development Fund, Norway	Jan 2017 to Dec 2020	Bardiya, Kailali, Humla, Sindhupalchok	Freed bonded labour, landless, earthquake affected, resource poor and marginalized families,	4,650
Climate Resilient Agriculture project (CRA)	The Bread for the World (BftW), Germany	Oct 2018 to Sept 2021	Sindhupalchok and Kaski	Earthquake affected, resources poor and marginalized households, particularly women and youths	2,100
SAMARTHYA	CARE Nepal	Jan 2019 to Dec 2021	Siraha and Udaypur	Land poor, vulnerable and socially excluded women and adolescent girls.	1027
Total	3	-	7	-	7777

**Bardiya: Badhaiyataal Rural Municipality, Gulariya and Bansgadhi Municipalities (3); Kailali:Gauriganga Municipality and Joshipur Rural Municipality (2); Sindhupalchok: Tripurasundari, Sunkoshi and Lishankhupakhar Rural Municipalities (3); Humla: Kharpunath, Chankheli and Sarkegaad Rural Municipalities (3); Kaski: Pokhara Metropolitan city and Annapurna Rural Municipality (2), Siraha: Dhangadimai Municipality and Bhagawanpur Rural Municipality (2); Udayapur: Belaka and Chaudandigadi Municipalities (2).*

Major Interventions

Project interventions vary according to the overall goal and objectives of the respective projects, geographic locations and need and priority of the local community. The major interventions under Livelihoods and Resilience Enhancement Project (LREP) testing and dissemination of new varieties of rice, wheat and potato; promotion of home garden, vegetable cultivation, promotion of small livestock such as goat, pig and rabbit; establishment of community seed banks; installation of solar energy based irrigation system and submersible motors; organizing training on family nutrition and plastic tunnel support for cultivating vegetable in the off season both for family consumption and for marketing. The project has considered cooperatives as key for sustaining project initiatives so as engaging and strengthening the capacity of seventeen cooperatives across the project sites. Cooperatives are involved in managing collective activities such as community seed banks, seed production and marketing, establishment and mobilization of community livestock promotion fund (CLPF) and marketing of local agricultural produces promoted by the project. Under the Climate Resilient Agriculture Project (CRA), the major interventions include establishment of resource home garden, promotion of ecological friendly agricultural practices, establishment of value chain of ecological agricultural produces and establishment of community seed banks. Again, cooperatives have been considered as a key local implementing partners for management of activities such as seed production, community seed banks management and marketing of ecological agricultural produces. Similarly, the major intervention under SAMARTHYA project are identification and promotion of climate resilient practices such as solar energy based irrigation system, agro-advisory services to farmers, making quality seeds available to farmers through linking them with private seed entrepreneurs and cooperatives and its scaling up/out in other places through the network of NFGF and NLRP on cost sharing basis (Table 2).

Table 2: Major intervention and implementation strategies

Name of Project	Objectives of the Project	Major Interventions
LREP	<p>Major objectives of the LREP are to:</p> <ul style="list-style-type: none"> • improve food and nutrition security • improve adaptive capacity • improve household economy • strengthen the capacity of cooperatives • reduce gender gap 	<ul style="list-style-type: none"> • Introduction to new crop varieties of rice, wheat and potato, • Home garden improvement, and fresh vegetable cultivation, plastic tunnel support for vegetable cultivation, • Small livestock promotional activities: Shed improvement, establishment of community livestock promotion fund (CLPF), VAHW training, • Establishment of community seed banks • Establishment of solar energy-based irrigation system and submersible motors,
CRA	<ul style="list-style-type: none"> • Diversify food and income sources of target groups, particularly for women-led and socially marginalized households; • Increase adaptive capacities and resilience of vulnerable communities to 	<ul style="list-style-type: none"> • Resource homegarden, diversity kits distribution; diversity fair, package of cattle shed improvement, plastic house, plastic pond and drip irrigation set; trainings on agroecological farming practices; promotion of IPM techniques such as yellow sticky traps and application of Trichoderma; institutional

	<p>climate and disaster risks; and</p> <ul style="list-style-type: none"> • Contribute to create favourable policy environment for mainstreaming climate-resilient agriculture in government (federal, provincial and local) policies and plans. 	<p>development of cooperative;</p> <ul style="list-style-type: none"> • Community seed bank, participatory variety selection on wheat, maize and potato. • Establishment and promotion of value chain of ecological agricultural produces
SAMART HYA	<ul style="list-style-type: none"> • Develop and implement inclusive solutions around issues of land rights, food, agriculture and resilience to climate change and disasters; 	<ul style="list-style-type: none"> • On-farm testing and promotion of climate resilient and profitable crop varieties, • Scaling up solar energy-based irrigation system to provide year-round irrigation facilities, • Demonstrate profitable vegetable farming in leased land targeting to landless/land poor families, • Promoting multi-use water system and water use efficiency technologies, • Promoting technologies enriching soil health • Demonstration of climate resilient farming technologies and practices and promote agricultural value chains, • Development of climate resilient scalable models. Eg Agro-met advisory services, climate resilient local seed system

Key Findings and Lessons learned

Livelihoods and Resilience Enhancement Project

Smallholders, resources poor and marginalized farmers in the project area used to cultivate main season crops as rice and majority of them were keeping land fallow in other season partially due to lack of the irrigation. Installation of small irrigation systems such as solar-based irrigation system, submersible motor and, diesel and electricity operated motors have helped planting crops round the year. Similarly, Small livestock such as goat, pig, rabbit, chicken are one of the major sources of cash income especially of women. But they often do not pay adequate attention on health, hygiene, feed and fodder for their animal. As a result of the work on these aspects, the way of rearing of these animals have been changed, the average number has been doubled in two years so as the cash income. Due to the increased production of crops, vegetables and livestock, cash income from these farm-based activities has also been increased and they are more food secured. The project team has also recorded that some of the smallholder farmers gave up doing wage works and also stopped seasonal migration to India.

Climate Resilient Agriculture Project

The CRA project has just been started and the initial lessons learned from the project are, i) it is important to create awareness that a balance between economic value and stability of production can be achieved with agro-ecological farming, ii) it is necessary to introduce ecological farming technologies and practices which require less inputs and reduce the workload for women.

SAMARTHYA Project

The activities implemented by SAMARTHYA project such as home garden improvement, lease-based farming and mushroom production has contributed to improve food and nutrition security of the Musahar and other resource poor households in the project area. The project is focusing its activity on climate resilient agricultural practices and if such practices are effectively implemented, it can bring economic and social changes in the life of poor, marginalized and vulnerable people. With the proper support and regular follow up, communities can be aware of improving their livelihood. Collaboration with local and provincial level government has a positive role in scaling up climate resilient models and implementing other agricultural programmes in sustainable manner.

Issues, Challenges and Way-forward

There are several issues and challenges related to food and nutrition security of the SMRPF in Nepal. They often have a large family size but do not have adequate productive resources to feed their family. A large majority of the smallholder farmers have not properly utilized the available land as they primarily rely on wage work for livelihoods. They do not have easy access to improved seed, technologies, information and irrigation facilities provided by the government. Access to subsidy based on application from farmers is also not in favor of the SMRPF due to lack of information, and capacity to apply. The SMRPF are often not organized and the volume of agricultural production are low and hence marketing is often a challenge. Due to low level of literacy and awareness, they are not capacitated enough to initiate or adopt new technologies if available.

To overcome the aforementioned issues and challenges, there should be a different extension system with equity-based provision of subsidy for smallholder farmers. Home garden improvement is an effective approach to improve dietary diversity of the smallholder farmers and has to be incorporated as a major activity in food and nutrition security programs with active participation of women. As the majority of the SMRPF settlement are located in less fertile areas with poor irrigation facilities, the provision of small irrigation schemes as solar energy based or submersible or surface motor can greatly contribute to improve production and productivity of the available land. Small livestock such as goat, pig, back yard poultry, rabbit should be an integral part of the agricultural program with SMRPF as they are seen as a good source of cash income and accessible source of animal protein for household consumption.

These activities should be comprehensive covering all aspects including health, hygiene, feed fodder, shed, breed, access to collateral free credit and marketing facility. For the long-term sustainability of the initiatives, organizing SMRPF in cooperatives, strengthening their capacity and promotion of collective marketing mechanism including establishment of *haatbazaar* at the local level are also very important.

६. बाल बचाउ कार्यक्रम (Save the Children): खाद्य र पोषण सुरक्षा संगसगै

दुर्गा प्रसाद आचार्य^५

Background

Save the Children has been working in Nepal since 1976 with the vision for all children to attain the right to survival, protection, development and participation focus as guided by the National Plan of Action for Children and the UN Sustainable Development Goals and covers a wide geographical area with multiple programs to look for sustainable solutions that will benefit children, their families and communities by improving incomes, nutrition, education and healthcare systems, and helping communities better prepare and respond to disasters.

To bring the lasting impact in the lives of children, Save the Children in Nepal focuses its works in 4 different themes viz Child Poverty, Child Protection & Child Right Governance, Education, and Health & Nutrition. Save the Children's Child Poverty Theme works to reduce the numbers of girls and boys in extreme poverty and seeks to increase young people's hopes and skills for better lives and thus contribute to Save the Children's breakthrough ambitions for children in 2030:

1. No child dies from preventable causes before their fifth birthday
2. All children learn from a quality basic education
3. Violence against children is no longer tolerated

Priority areas

Child Poverty theme focuses on three sub-thematic areas which are central to reducing the survival, nutritional, learning and protection deprivations suffered by children in poverty in both development and humanitarian contexts. Those sub-thematic areas are:

- Child Sensitive Social Protection
- Food Security and Livelihoods
- Adolescent Skills for Successful Transitions
-

Overall objectives of Child Poverty theme:

Vulnerable youths and households have sufficient incomes and resources at all times to support successful transition to adulthood and child wellbeing

⁵ Child Poverty Reduction Advisor, Save the Children, Corresponding email: durga.acharya@savethechildren.org

Projects and their coverage

Currently there are a total of 5 projects focused on food and nutrition security which are being implemented in 17 districts of Nepal.

Name of the projects	Project districts and Palikas	Targeted/reached beneficiaries	Donor	Major interventions
Sustainable Actions for Resilience and Food Security (Sabal) ⁹	477 VDCs of 11 districts (Dolakha, Kabhreplanchok, Khotang, Makwanpur, Nuwakot, Okhaldhunga, Ramechhap, Rasuwa, Sindhuli, Sindhupalchok, Udayapur)	636686 poor HHs (reached)	USAID	<ul style="list-style-type: none"> - Training and technology demonstration on food crops and vegetable production - Support for construction and rehabilitation of Irrigation systems - Homestead food and nutrition security training - Livestock production and management - Farm-yard Poultry farming for nutrition - Orientation to mothers' groups on Essential Nutrition Action (ENA)
ABASAR	2 municipalities of Jajarkot district (Chhedagadh and Kushe municipalities)	7549 HHs (Most poor and vulnerable families)	Save the Children Italy	<ul style="list-style-type: none"> - We have adopted Graduation Model to bring the most deprived families out of poverty in this project. It involves food consumption support to the most deprived families for 6 months (until they start earning) followed by asset transfer and technical trainings. - Technical training and production input support for food crop and high value crop production - Nutritional Awareness sessions to project beneficiaries - Support families for kitchen gardening - Vocational skill and micro-enterprise training to youths

⁹ SABAL was started in 2014 and phased out in December 2019.

Name of the projects	Project districts and Palikas	Targeted/reached beneficiaries	Donor	Major interventions
Integrated Project Rolpa (this is integrated project in three different thematic areas: Child protection, education and livelihoods)	7 wards of Tribeni Municipality, Rolpa	638 HHs (from which children are in labour)	Save the Children Korea	<ul style="list-style-type: none"> - Technical training and production demonstration of food crops and high value crops - Nutritional Awareness sessions to project beneficiaries - Breed improvement program of goats and pigs (local breeds crossed with improved and high yielding) - Vocational skill and micro-enterprise training to youths - This project adopts an approach of asset transfer for bringing the most poor families out of poverty.
Improving lives of Children in Udayapur through Child Sensitive Livelihoods and Social Protection	2 Municipalities of Udayapur district (Katari and Udayapurdadhi)	945 HHs (poor and vulnerable families)	NZ government and Save the Children New Zealand	<ul style="list-style-type: none"> - Vegetable production and marketing - Support for irrigation scheme construction and renovation
Sponsorship project	10 municipalities from Saptari (6), Mahottari (2) and Sarlahi (2) districts	572 HHs (Landless and the most deprived families)	SC US, SC Korea, SC Australia, SC Italy	<ul style="list-style-type: none"> - Leasehold vegetable farming - Technical training to farmers on vegetable production and marketing - Nutritional awareness sessions in farmers' groups - Micro-enterprise and vocational skill training to the youths - Support for installation of irrigation system/schemes

Key findings and lessons learnt

- The projects have been able to generate strong evidence that households' financial resources are important for children's outcomes. Of the incomes earned, a significant proportion (about 30%) of annual income has been found invested on children's health, education and nutrition by the beneficiary families.
- Engaging local government in the program cycle (from planning to implementation and monitoring) helps to increase the ownership of the program and larger number of beneficiaries can be reached with limited resources.
- Registration of farmers groups to government line agencies ensures sustainability of groups and also to expand the linkages to pull resources and technical services. This has been well adopted across Save the Children's all livelihood projects.
- Certification of products' brand and quality from the respective government agencies ensures reliable sale in the markets and gives good return in long run.

Key issues, challenges and way forward

- Imparting knowledge alone is insufficient to bring about changes among the poor, vulnerable and socially excluded families. Post training support such as seed, equipment, and loans provision are necessary to make the training effective and make the families able to generate adequate incomes.
- Leasing of land by the landless people is very difficult and unreliable in the absence of land leasing policy. Clear-cut policy on land use and land leasing seems very urgent for local governments in order to engage and benefit the land less people from agriculture.

७. खाद्य तथा पोषण सुधारको लागि पारीवारीक खेती: सुआहरा दोश्रो

रोजी सुवाल^{१०}, नारायण प्रसाद तिवारी^{११}, निता योगी^{११}, रमेश प्रसाद अधिकारी^{१०}, र पूजा पाण्डे राना^{१०}

BACKGROUND

In Nepal, poor dietary quality and food insecurity are vital contributors to micronutrient deficiencies, inadequate energy intake, and weak growth and development of the population (MSNP, 2012). Due to poverty, small mixed farm landholding, remoteness, and lack of access to resources; household food insecurity and availability of and access to diverse and nutrient rich foods remain a challenge in rural Nepal. In 2018, the Government of Nepal (GoN) reaffirmed its commitment to maternal and child nutrition with the Multi-sector Nutrition Plan II (MSNP II; 2018-2022) to reduce the prevalence of undernutrition particularly among pregnant, lactating women and children under 2 years of age. Nepal's Agriculture Development Strategy (ADS;2015-2035) is prioritizing the food and nutrition security program as the flagship program with the diversification of agricultural production systems to improve food and nutrition security of most disadvantaged groups.

Nepal is predominantly a rural society in which 66% of population are still engaged in agriculture for their livelihoods (FAO, 2016). Majority of rural people with subsistence farming practices depend directly on agriculture for their food whereas vulnerable households engage in daily farm labor also depend on agriculture indirectly for the income needed for other household expenses such as health care, water, shelter, school fees, clothing, fuel and transport. Leveraging agriculture seems essential to improve nutrition in low income countries but it may not be possible through the agriculture without appropriate planning and investments made with the purpose of improving nutrition (Technical Brief, USAID). The link between agriculture and nutrition is apparent, particularly in subsistence contexts, given that agricultural production provides food and income. The relationship between agriculture and nutrition, however, is quite complicated, including at least six distinct pathways from food production to food consumption (Kadiyala et al., 2014) and limited evidences on how agriculture improves nutrition.

This paper is thus aimed to share some findings and learning of *Suaahara* II about agricultural programming as part of the multi-sectoral programmatic interventions to improve maternal and child dietary diversity in rural Nepal. The paper tries to explore the relation between agriculture and nutrition based on implementation evidences; and provides key recommendations for future programming. The paper may be interest of policy makers, program planners, researchers, implementers and development partners who work for nutrition through agriculture.

INTRODUCTION

^{१०} Helen Keller International, Kathmandu Nepal,

^{११} Vijaya Development Resource Center, Nawalparasi

Suaahara II (SII), is an integrated nutrition program funded by the United States Agency for International Development (USAID), targeting 1.5 million beneficiaries across 42 of Nepal's 77 districts. The program, implemented from 2016-2021, is an extension and scale-up of *Suaahara I (SI)*, a previous five-year USAID-funded program. *SII* aims to reduce widespread undernutrition in Nepal, particularly among mothers and children within the first 1000-days of life, by improving nutrition-related practices among households and families. *SII* supports the implementation of the GoN's MSNP II as well as aligns with government programs and policies by generating demand for public and private resources, building capacity of officials and workers, advocating for integrated nutrition during global, federal and local platforms, tracking and reporting of government-prioritized indicators, and generating evidence on integrated nutrition.

SII is implementing the Homestead Food Production (HFP) program; as an essential part of large-scale multi-sectoral nutrition program to improve women and children's access to diverse and nutrient-rich foods. Helen Keller International (HKI) globally uses HFP to increase food production, empower women and improve nutritional outcomes (Haselow, Stormer and Pries, 2016). HFP includes agricultural and livestock activities complimented by nutrition, Water Sanitation and Hygiene (WASH), and GESI related behavior change and capacity building activities. Building on HKI's prior experience globally, SI's HFP interventions focused on production to consumption, and in SII, activities aiming to support communities for agricultural market linkages and related income generation were added.

History: HFP program

Helen Keller International piloted HFP program first time with 20 households in Bangladesh in search of a sustainable solution to vitamin A deficiency in 1988. Since 1990 different developing countries (Asia and Africa) started to implement the HFP program to increase production of vitamin A rich fruits and vegetables with an objective of improvements in intake of micronutrients by women and child. After an initial debate about low bioavailability of micronutrients in fruits and vegetables, HKI added animal production interventions into HFP program for the increased availability and access to animal source foods since 2002. Learning of program indicated that homestead food production alone cannot improve nutrition until it is integrated with nutrition education and behavior change communication strategies. HKI upscaled Homestead Food Production (HFP) integrated with Essential Nutrition Action (ENA) to improve nutritional knowledge and improve household behaviors as the Enhanced Homestead Food Production (EHFP) model.

PROGRAMMING PRINCIPLES

The strategy emphasizes household production of micronutrient-rich foods both plant source and animal source to address gaps in access to and availability of and to facilitate consumption of those foods by women and children under five in disadvantaged areas of Nepal.

Targeting approach

SII prioritizes HFP interventions for 1000-day households in areas identified as food insecure by the government, rather than blanket coverage. In addition to knowledge gap, both availability of and access to diverse nutrient-rich foods have been identified in the formative research as major barriers among resource poor-disadvantaged groups to improving nutrient intake from foods. HFP interventions thus were implemented in total 1504 of 3353 *SII* wards of 42 program districts where most communities are food insecure by emphasizing HFP activities for garden to plate. An equity quintile measurement is used to reach resource-restricted households with a child in the 1000 period with additional agriculture supplies (eg chicken wire, drip) to translate knowledge into action.

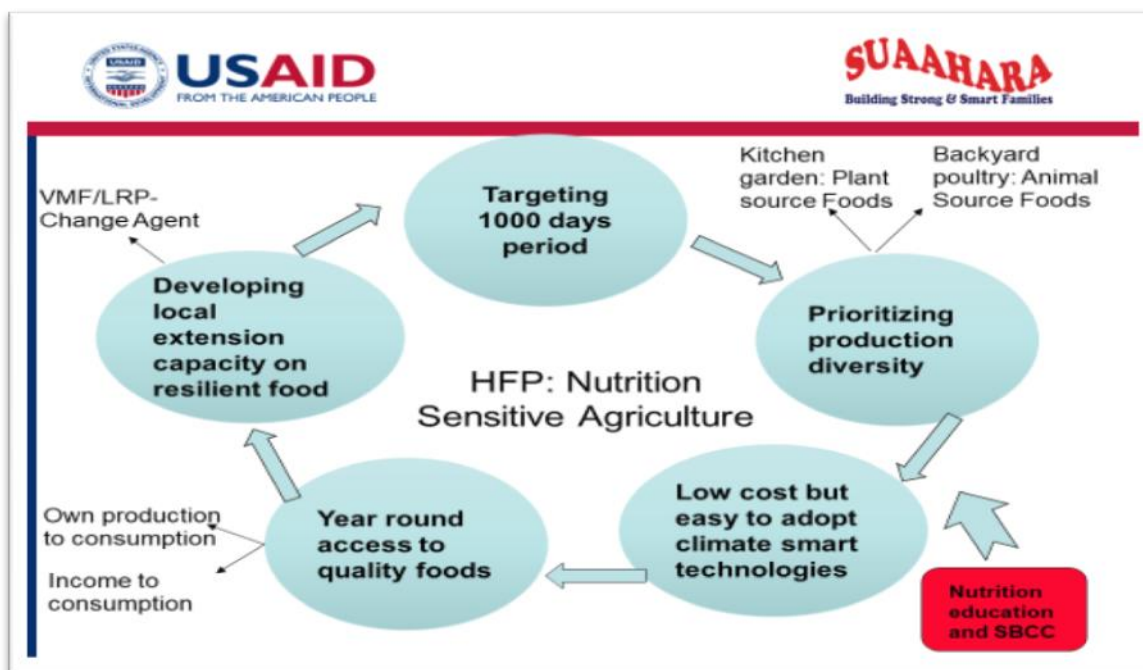


Figure 1: HFP programming principle

Promote production diversity at the household level

To improve maternal and child dietary diversity, micronutrients from both plant and animal source foods are essential. But consumption of animal source foods, notably eggs and meat, by women and children under five is low. *SII* emphasizes consumption of eggs as cheap source of animal protein particularly for disadvantaged 1000 days households (economically poor) through improved backyard poultry intervention. In addition to backyard poultry component, *SII* supports households to increase vegetable production diversity prioritizing nutrient rich such as orange fleshed sweet potato, pumpkin, carrot, dark green leafy vegetables, broccoli, Swiss chard, asparagus etc. through improved kitchen gardening so that families can have access to more diverse diets.

Year-Round availability of nutrient rich foods

It seems challenging to make home-grown foods available throughout the year in some areas of Nepal with substantial seasonal weather changes, like the upper mountains. It is hard to grow

vegetables and fruit during the winter in these areas. *Suaahara* helps participants to process and preserve food by increasing their knowledge and skills on drying and storage techniques. Promotion of drought-resistant crops like *Kangkung*(water spinach) is targeted to support households in DAG areas in growing green leafy vegetables during the off- season of other green leafy vegetables.

Provide support to adapt to good food production practices

SII study findings show that improved rearing practices for local chickens increases egg productivity two-fold. The existing poultry rearing practices of rural communities are insufficient, which tends to decrease egg-laying productivity and create high poultry mortality. *SII* is promoting improved chicken husbandry practices such as providing chicken feed, keeping chickens in coops, regular vaccination against Newcastle disease and deworming. Similarly, *Suaahara* prioritizes low cost but easy to adopt kitchen gardening practices-waste water management, integrated pest management, preparation of bio-pesticides by using locally available materials for quality production of vegetables.

Developing local extension capacity as the community change agents

In the DAG areas, communities have limited access to agriculture supplies, technical and extension services; and market linkages. Evidence shows that the demonstration of agricultural practices increases the adoption and diffusion of practices. *Suaahara* emphasizes the development of Village Model Farmers (VMFs) as the community level agriculture and livestock extension worker to sustain and spread HFP practices. Each VMF is a woman selected from the community in which they live to cultivate an HFP farm.

Integrated with nutrition education and behavior change

Rather than focusing agriculture interventions for increased production, productivity and marketing purposes only, *SII* focuses on integrated agriculture for nutrition purpose.

- HFP groups promote good agricultural practices as a sub-grouping of Health Mothers Group (HMG). During community platforms (for example, HMG, food demonstration sessions, and key life events), GoN-supported Female Community Health Volunteers (FCHVs) highlight the importance of food for a quality diet to motivate participants to practice household food production.
- To encourage households to invest in proper poultry rearing and egg production, episodes of the *SII*-created *Bhanchhin Aama* radio program and text messages¹ to participants highlight the consumption of animal source foods. Follow up visits by frontline workers to HFP participating households after training and agriculture input distribution promotes garden to plate and garden to market approaches for improved dietary diversity.
- *SII* provides knowledge and skills to 1000 days households about use of agricultural income for improved nutrition, health and WASH behaviors.

INTERVENTIONS

Suaahara II's agriculture interventions were targeted at three levels-household, community and system.

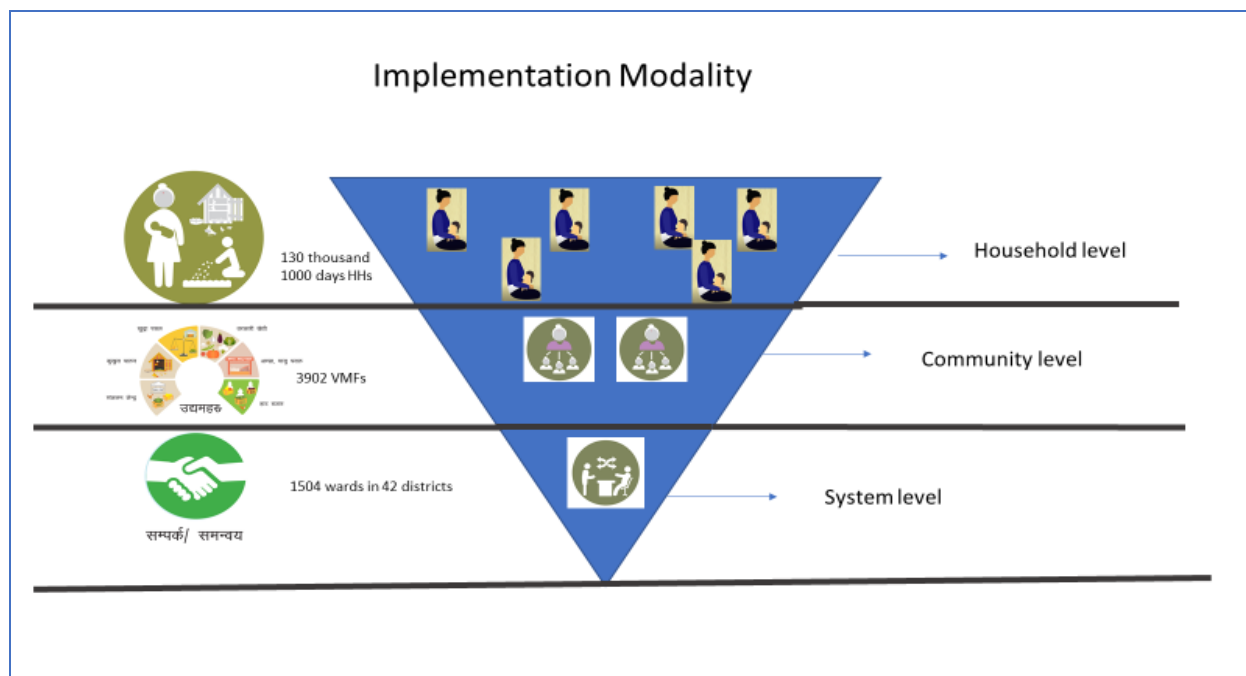


Figure 2: levels of implementation

Within a targeted community (1504 wards of 42 program districts), a total of 130,000 1000 days women were organized into HFP groups as the sub-group of health mothers group. To improve knowledge and skills of those women and their family members on household food production system, SII provided 2 days HFP training at group level alongwith season-wise three composite vegetable seed packs and 5 fully vaccinated chicks. These input support to HFP trained households was one time initially during the project life to encourage them for start up practicing improved kitchen gardening and backyard poultry rearing. A total of 3,43,000

vegetable seed packets and 5,72,835 chicks were distributed to all HFP trained households. In addition to training and input support, households received on-site coaching support through follow up visits of Suaahara frontline workers which facilitates them to adopt good practices related to quality food production.

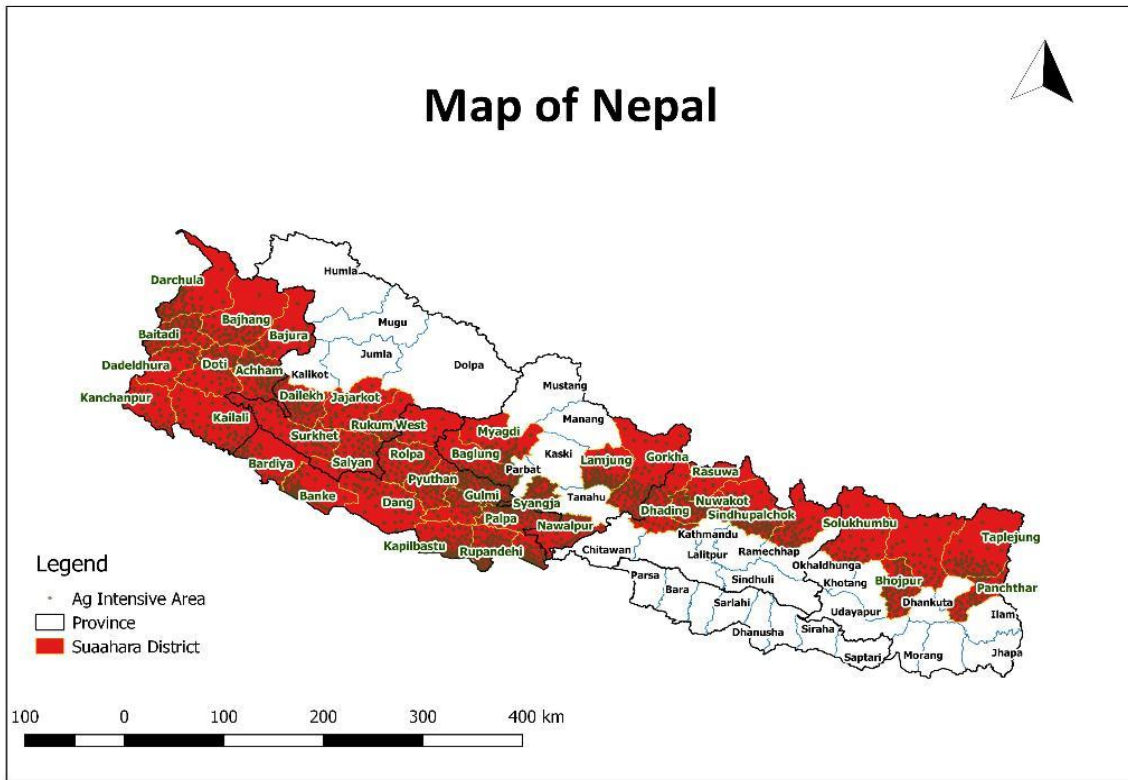


Figure 3: HFP intervention districts

At community level, *Suaahara II* developed VMFs as the change agent to reach new 1000 days households; and minimize agriculture and livestock extension services gaps. *Suaahara II* enhanced knowledge and skills of potential 5686 women lead farmer/progressive farmer/HFP group members to promote them as the change agent through VMF capacity development training and demonstration support program. A need based and specialization trainings such as saving credit and group management, business plan and agricultural marketing; and local resource person development were additional activities of *Suaahara II* to build social entrepreneurship skills of potential VMFs and link households with surplus production with local market.

Suaahara II worked closely with agriculture and livestock stakeholders to plan, implement and improvise programmatic interventions. *Suaahara II* developed HFP training package and other information, education and communication materials in coordination and consultation with concerned departments of Ministry of Agriculture and Livestock Development (MoALD) to promote HFP programming for improved maternal and child dietary diversity. A total of 1788 agriculture and livestock extension workers were oriented on nutrition sensitive agriculture to deliver HFP training package at community level and ensure the quality implementation. *Suaahara II* facilitated coordination meeting with agriculture and livestock stakeholders at all three tiers-municipality, province and central level to upscale and sustain HFP interventions.

RESULT

This section is based on findings of quantitative and qualitative studies under *Suaahara II*'s monitoring system. Annual Beneficiary survey primarily serve to monitor progress over time related to key *Suaahara II*'s inputs, outputs and outcomes in the intervention areas. The annual surveys (2017,2018 and 2019) of *Suaahara II*'s were conducted among a representative sample households with a child under five years by New ERA.

Knowledge and Practice on household food production

USAID mid term *Suaahara II* performance evaluation report (2019) highlights that most beneficiaries understand *Suaahara* as Harek Bar Khana Chaar (every meal food from four groups). The percentage of household using their own land for kitchen gardens increased from 62% in 2017 to 78% in 2019 which may be due to increase in knowledge of household heads on importance of kitchen gardening for improving diets. Annual Survey reports show that HFP knowledge household heads saw significant improvements in recognition that improving diets of women and children is a benefit of both homestead gardens (from 48% in 2017 to 69% in 2019 and backyard poultry from 41% in 2017 to 67% in 2019. It was found that households giving more priority during planning which includes homestead garden crop selection, protection from animals, ease of watering, crops that bring in most income and available space. Households with homestead gardens meeting minimum criteria increased from 8% in 2017 to 18% in 2019. Similarly knowledge of household heads and mothers on good poultry management practices (keeping chickens in coop, providing feed and clean water, regular vaccination and separate chickens if any abnormal symptoms observed and contact with technical person) was also found increased..

Access to diverse and nutrient rich foods

Annual survey shows that duration of diverse and nutrient rich vegetables from homestead gardens has increased on average from 5.8 to 7.1 months of the year. Also, households with poultry ownership (number of chickens 10 and above) slightly increased from 23% in 2017 to 27% in 2019. Number of eggs produced per household in last 1 month increased from 12 in 2017 to 31 in 2019 but no. of households raising laying hens was found decreased from 55% in 2017 to 42% in 2019. *Suaahara II* formative research reported that sale of chicken for immediate cash need is one of main reasons for low egg production and consumption among mothers and children in survey districts. Only 1% of the households reported selling of surplus eggs produced in the past month can be assumed due to increase in egg consumption among child under 5 and 1000 days women. Besides increased income level and nutritional value of egg; household level egg production was reported as one of key factors for increased egg consumption.

The income level of households who earned above 10,000 NPRs/annum by selling vegetables and chickens were found increased from 24% & 9% in 2017 to 29% & 19% in 2019 respectively. Around two-thirds of those households reported that the additional income were used for buying other staple food and improve hygiene behaviors particularly on purchases of supplies as soap, water filter etc.

Status of food security and dietary diversity

Suaahara II Annual Survey data shows that the prevalence of household food security increased from 52 % in 2017 to 73% in 2019 and the overall household food insecurity score (1-4) decreased from 2.6 in 2017 to 1.4. The household food insecurity score reduced significantly in the DAG area compared with non-DAG areas ($p < 0.000$).

Food Security (in HFP areas only)	All (N=987)	All (N=987)	Differences	All (N=988)	Differences	Differences
	Mean (SD)/%	Mean (SD)/%	P value	Mean (SD)/%	P value (Y1 Vs Y3)	P value (Y2 Vs Y3)
Household food insecurity score	2.6 (3.7)	1.8 (3.1)	0.000	1.4 (2.9)	0.000	0.010
Household food insecurity (in past 30 days) (HFIAS)						
Food secure	52.4%	63.9%	0.000	72.7%	0.000	0.001
Mildly food insecure	22.5%	20.6%		14.7%		
Moderately food insecure	22.0%	12.0%		11.2%		
Severely food insecure	3.1%	3.6%		1.4%		

(Source: Annual Survey, 2017, 2018 & 2019)

Analyses of *Suaahara II* annual surveys (2017, 2018, 2019) data show that the quality diet intake behavior-e.g dietary diversity of child increased from 49% in 2017 to 56 % 2019 ($p < 0.000$); and dietary diversity of women increased from 38 % in 2017 to 54% 2019 ($p < 0.000$) for DAG community with HFP interventions was significantly improved from year 2017 to 2019. The consumption of eggs in both mother and child increased significantly by 7% and 12 % respectively. Similarly the consumption of meat was also found increased significantly by 6 among mothers in DAG community and 4 percent among children.

Women empowerment

Suaahara II interventions case studies documented that HFP program also increased their power and control over household agriculture production and consumption decision for healthy and nourished family. *Suaahara II* VMF monitoring checklist data shows that social marketing (through local resource person, community extension) of homestead food production is being helpful for DAG women to increase their capability to earn supplementary income for family.

LESSONS LEARN

It has been reported that there is some positive association between HFP programming and maternal and child dietary diversity; and food security, but it is important to analyze drivers of household food production system such as seasonality, climate change, socio culture, economy and geography while designing agricultural programmatic interventions.

Targeting approach of 1000 days household for agriculture interventions, with an explicit nutrition purpose seems effective to sensitize households on good practices of food system. But training alone and one- time agriculture input support is not enough to improve and change household production behavior particularly for resource poor households and communities in geographically remote areas.

The post training and input support follow up through regular technical and extension services could motivate household to improve quality food production. In addition to extension services, access to improved agriculture inputs matters for adoption of quality food production by households which seems challenging in remote areas.

Working closely with local government by enhancing their capacity on planning and implementation of nutrition sensitive agriculture interventions is key to increase and sustain women and child's access to diverse and nutrient rich foods.

RECOMMENDATIONS

Strengthening agriculture and nutrition linkages through **scaling up evidence base interventions** eg. through campaign on “*Ek ghar Ek Karesabari*” is important but which could not be possible without leadership of agriculture government stakeholders.

- Investment on development of community/local agriculture extension mechanism (eg *Ek Gau Ek Krishi/Pashu Sahajkarta-Ek Gau Ek Sthyania Krishi Shrot byakti*) is one of the urgent needs to reach households in remote and DAG areas. The success of the national Female Community Health Volunteer Program (FCHV) to reach communities in rural areas with primary health care education and services with a special focus on maternal and child health and family planning can be piloted in agriculture sector as well.
- Development of local level private entities (e.g VMFs, agro vets, commercial farmers) should be prioritized to minimize agriculture inputs supply gaps and capacity building activities like training, orientation, input support.
- Nutrition sensitive agriculture interventions should not be limited to production scale of kitchen gardening and backyard poultry but should be complemented by other interventions associated with increasing agricultural income and livelihood opportunities.
- Generating practice based evidences on leveraging agriculture for nutrition may contribute to design context based nutrition sensitive agriculture interventions

REFERENCES

Bushamuka, VN et al., (2005) Impact of a homestead gardening program on household food security and empowerment of women in Bangladesh. *Food Nutrition Bulletin*. 26: 17-25.

Dulal, B, Mundy, G., Suwal, R, Pandey P, and Cunningham, K.(2017). Homestead Food Production and Maternal and Child Dietary Diversity in Nepal: Variations in Association by Season and Agroecological Zone. *Food and Nutrition Bulletin*.

Food and Agriculture Organization of the United Nations. (2016). Statistical Yearbook: Nepal.

Government of Nepal National Planning Commission(2017). Multi-sectoral Nutrition Plan II (2018-2022). Singha Durbar, Kathmandu, Nepal.

Government of Nepal, Ministry of Agriculture Development(2016) Nepal: Zero Hunger Challenge National Action Plan (2016-2025), 2016, Singhadurbar, Kathmandu

Government of Nepal, Ministry of Agriculture Development(2015). Agriculture Development Strategy (ADS), Singhdurbar, Kathmandu

Kadiyala, S., Harris, J., Headey, D., Yosef, S., and Gillespie, S. (2014). Agriculture and Nutrition in India: mapping evidence to pathways. *Annals of the New York Academy of Sciences*.

United States Agency for International Development (USAID; 2015), Multi-Sectoral Nutrition Strategy (2014-2025), Technical Guidance Brief, Nutrition Sensitive Agriculture, USAID

United States Agency for International Development (USAID,2019), *Suaahra II* Technical Strategy: Agriculture, Markets and Resilience, HKI, Chakupat, Lalitpur

United States Agency for International Development (USAID,2018), *Suaahra II* Agriculture Technical Brief, HKI, Chakupat, Lalitpur

United States Agency for International Development (USAID; 2019), *Suaahra II* Formative Research: Exploring factors affecting key *Suaahara II* behaviors and ways to address them, HKI, Chakupat, Lalitpur

United States Agency for International Development (USAID,2019), *SuaahraII*Annual Survey Year 3 (2019), HKI, Chakupat, Lalitpur

United States Agency for International Development (USAID,2019), Mid-Term Performance Evaluation of USAID/Nepals' *SuaaharaII* Integrated Nutrition Program, The United States Government

The World Bank. (2007). From Agriculture to Nutrition: Pathways, Synergies and Outcomes. The World Bank, Agriculture, and Rural Development Department

द. खाद्य तथा पोषण सुधार आयोजना (Food and Nutrition Security Enhancement Project (FANSEP) खाद्य तथा पोषण सुधारका लागि आयोजनाका चुनौती तथा प्रयासहरू

प्रद्युम्नराज पाण्डे^{१२}, परशुराम रिमाल^{१३} र सन्जिव पण्डित^{१४}

1 Project Overview

1.1 Background

The main aim to design the Food and Nutrition Security Enhancement Project (FANSEP) is to enhance climate resilience, improve agricultural productivity and nutrition practices of targeted smallholder communities in selected areas of Nepal. It contributes to the Government of Nepal (GoN)'s capacity to deliver agriculture extension services at the decentralized level, enhance and diversify income opportunities for the targeted rural poor deriving the bulk of their livelihoods from agriculture, mitigate climate risk exposure and potential loss of incomes, improve nutritional outcomes, and mainstream women empowerment. It will increase the resilience and reduce the environmental footprint of production by mainstreaming climate smart agriculture (CSA) practices throughout project activities. Climate resilience of the project beneficiaries or their ability to withstand and recover from climatic shocks, particularly droughts and rainfall will be achieved through the application of CSA practices, diversification towards high value and nutritious crops and generation of additional incomes. Nutrition security will be realized through Increased crop and animal productivity, Increased household income, improvement in score on food insecurity experience scale and improved dietary intake for pregnant and nursing mothers and children between 6 and 24 months.

1.2 Rationale of the Project

The project is financed by the GAFSP, which is a multi-donor financing mechanism. Under the rules of GAFSP engagement, the World Bank has been designated by the GoN as the supervising entity for this project, given its extensive country experience of investment in development sectors and its strong position to support the GoN for increased, inclusive, and sustainable growth and development in Nepal. The World Bank has successfully provided support for investments in agriculture, rural development, food and nutrition security, and health sector projects and programs in Nepal and can draw from its vast international and regional experience, in addition to the World Bank's convening power. The World Bank's technical support for project management, M&E, and partnership experience with different government agencies and other development partners continues to be instrumental in the country. As such, the project has been prepared and implemented in accordance with the rules and procedures of the World Bank. The FAO, as a development partner, has been closely involved in the original GAFSP proposal prepared by the GoN. The GoN has indicated that there will be a role for the FAO as a sole source TA provider during project implementation on account of the FAO's knowledge,

^{१२} Senior Monitoring and Evaluation Officer, FANSEP,

^{१३} Senior Monitoring and Evaluation Expert, TA Team, FANSEP

^{१४} Monitoring and Evaluation Officer, FANSEP

experience, and technical expertise in the agriculture sector of Nepal. Other partners, including the European Union (EU), U.S. Agency for International Development (USAID), Action Aid, and other development partners have also supported the preparation of this project. USAID is financing a separate operation in the rural areas of Nepal under its Feed the Future initiative. The project will therefore continue to coordinate and ensure convergence of interventions proposed under this project with those under the USAID and other donor-funded operations.

1.3 Project Development Objectives

The Project Development Objective (PDO) is to enhance climate resilience, improve agricultural productivity and nutrition practices of targeted smallholder farming communities in selected areas of Nepal. Climate resilience in this project is defined as beneficiaries' ability to withstand and recover from climatic shocks, particularly droughts and rainfall. This would be achieved through the application of Climate Smart Agriculture (CSA) practices as well as diversification in crops grown and additional income generated. The project will deliver on CSA's 'triple wins' through (a) sustainable increase in productivity and farm incomes (food security), (b) enhanced resilience to impacts of climate change and variability (adaptation), and (c) reduced greenhouse gas (GHG) emissions per unit of product and increased carbon sequestration (mitigation).

1.4 PDO-Level Indicators

- Farmers adopting improved agricultural technologies (including CSA) of which female (CRI)¹⁵
- Increased crop and animal productivity by direct beneficiaries (disaggregated by crop and animal species)
- Increased household income (farm and off-farm) (GAFSP core indicator, gender disaggregated)
- Improved score on the Food Insecurity Experience Scale (FIES¹⁶) by direct beneficiaries (gender disaggregated)
- Improved dietary intake for pregnant and nursing mothers; and children between 6 and 24 months.

1.5 Project Components

Component A: Climate and Nutrition Smart Agriculture Technology Adaptation and Dissemination: The objective is to improve productivity and postharvest management of crops and livestock by promoting appropriate climate-smart and nutrition-sensitive technologies through improved extension and research services and efficient dissemination to producers. Attention will be given to ensure inclusion of women and youth, and other vulnerable segments of the rural population, in addition to strengthening the decentralized government structures for effective service delivery at the local level. There are two subcomponents.

Subcomponent A1: Technology Adaptation and Testing. This will focus on appropriate CSA and nutrition-sensitive agriculture technologies; improved inputs (foundation seeds, drought-tolerant varieties, and animal breeds); and improved agronomic, husbandry, and postharvest

¹⁵ CRI = Corporate Result Indicator.

¹⁶The FIES was selected based on the use of extensive validation criteria focusing on whether the indicator (a) correlates highly with the Sustainable Development Goal (SDG) nutrition indicators (such as stunting), (b) is relatively low cost to collect information, and (c) can have wide country coverage.

practices¹⁷ to enhance resilience to climatic shocks and trends at the household and landscape level, taking into account nutrition value and food safety considerations, including responsible use of antibiotics to reduce resistance risks and crop storage and management practices to reduce aflatoxin risk.

Subcomponent A2: Technology Dissemination and Farmer Skills Development.

The objective is to enable farmers to master the management skills (Good Agriculture Practices-GAPs¹⁸) required for sustainable production diversification and intensification of agriculture practices and postharvest processing, thereby achieving climate resilience and mitigation. Under this subcomponent, the project will support (a) strengthening of advisory services and skill development of agricultural public extension staff and private service providers, (b) streamlined farmer field school (FFS) for crop and livestock production and adoption support, and (c) demonstrations and field days.

Component B: Income Generation and Diversification. The objective is to improve and diversify the income-generating capacity of targeted beneficiaries by reducing transaction costs through investments in critical business skills and productive assets, supporting value-added activities, and building market linkages. This component will consist of two sub-components.

Sub-component B1: Strengthening Producer Groups. This subcomponent aims to organize and strengthen producer groups (PGs) representing the targeted farmers by organizing them around commodities of common interest and enhance their capacity in terms of governance, leadership skills, group dynamics, decisionmaking, problemsolving and risk management, bookkeeping, meeting organization, agricultural seasonal planning considering changing climate trends and risk, marketing, value addition, food safety, preparation of simple business plans (BPs), and simple monitoring and evaluation (M&E).

Subcomponent B2: Market Linkages through Productive Alliances (PAs¹⁹). This subcomponent aims to consolidate the linkages between Producer Organizations (POs) and Agri-Business Enterprises supporting both input and output markets, including micro, small, and medium enterprises (MSMEs), traders, and rural financial institutions through the provision of financing for simple BPs developed under Subcomponent B1. A Matching Grant (MG) scheme will be implemented to finance eligible BPs that demonstrate real potential for marketing and income generation for the target beneficiaries and contribute to building climate resilience, considering efficient energy and resources use, and include investments to enhance food safety.

Component C: Improving Nutrition Security. This component aims to address the underlying causes of malnutrition by making the food system responsive to these causes to provide adequate, safe, diversified, and nutrient-rich food. This component will consist of two subcomponents.

Subcomponent C1: Institutional Capacity Strengthening. Based on a capacity needs assessment (CNA) and a participatory diagnostic of the causes of malnutrition, the project will support subnational government nutrition and food security coordination networks and public outreach delivery in the project areas.

¹⁷The type of CSA practices which will become relevant in the project are described in annex 2.

¹⁸GAPs include both production practices and post-harvest (processing and so on) practices.

¹⁹A PA is defined as an agreement between a group of organized farmers and a buyer, for the provision of a certain good, in a specified quantity and quality.

Subcomponent C2: Nutrition Field School (NFS) and Home Nutrition Gardens (HNGs). Under this subcomponent, a skill-based learning approach, known as NFS, will be supported in each target community, following behavior change theory to remove barriers and identify catalysts for improved food-based nutrition practices and provide packages of inputs and services to target beneficiaries.

Component D: Project management, communication, and M&E. The main objectives are to (a) ensure effective strategic and operational planning, implementation, and M&E of project activities, and attendant efficient use of funds, as well as coordination of interventions across Components A, B, and C implemented by participating stakeholders and strategic partners (for example, Food and Agriculture Organization of the United Nations [FAO]); (b) evaluate the project's outcomes and impacts on beneficiary groups, with special focus on midterm and final results; and (c) communicate efficiently to various public and private entities on project activities, outcomes, best practices, and lessons learned.

1.6 Project Beneficiaries

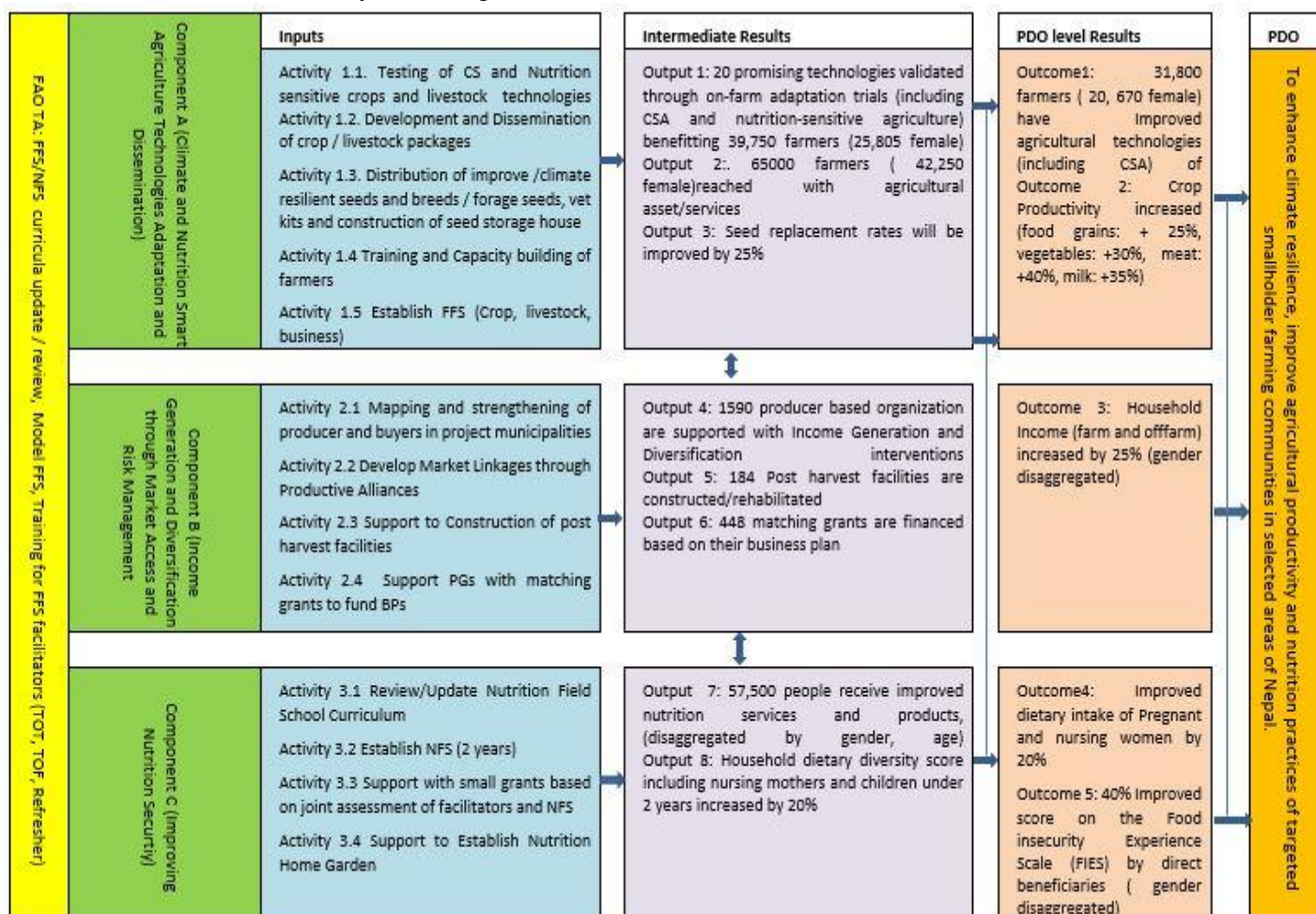
The project will focus on eight vulnerable rural municipality clusters (corresponding to the old 'districts') of Nepal, in the (mid-) hills and terai, using the following criteria on the preselected 14 districts in the original proposal: (a) earthquake affected (losses), (b) climate change vulnerability ranking, (c) HDI ranking, (d) incidence of malnutrition, (e) food security status, and (f) poverty status. The project will target the following 'districts': for the (mid-) hills - Dhading, Gorkha, Dolakha, and Sindhupalchok and for the terai - Saptari, Siraha, Mahottari, and Dhanusha. In each district, two rural municipalities (gaunpalikas) are selected for project implementation which are: Gajuri and Benighat Rolang (Dhading), Gandaki and Barpak Sulikot (Gorkha), Tamakoshi and Kalinchowk (Dolakha), Lisankhu Pakhar and Indrawati (Sindhupalchowk), Bishnupur and Rajgarh (Saptari), Aurahi and Bariyarpatti (Siraha), Dhanauji and Mukhiyapattiharniya (Dhanusha) and Ekdara and Pipara (Mahottari).

The project will primarily target vulnerable (earthquake affected, acute food insecure, disadvantaged, marginalized, and women headed) households and aims to reach approximately 65,000 direct beneficiaries. Smallholder and marginal farmers who constitute the majority of the poor in Nepal will be prime beneficiaries. The beneficiaries will also include landless families and agricultural wage laborers who will receive skill trainings and may be benefitted in terms of real wages as a result of increased productivity and demand for labor. The nutrition interventions will mainly target households with young children, adolescent girls, and pregnant and lactating women. At least 65% of the direct beneficiaries are expected to be female. In addition, farmers from adjacent communities are expected to be indirect beneficiaries as they will learn from project-supported farmers, adapt the technologies through farmer-to-farmer extension, and benefit from information delivered by the project. Similarly, rural agricultural laborers, for whom both demand for labor and income generation are expected to go up, will indirectly benefit from the project as farm-level productivity increases. The beneficiary targeting methodology will be done in collaboration with the World Bank's Development Impact Evaluation (DIME) team based on a set of criteria to be identified using a Proxy Means Test to ensure that the set of variables chosen are the best possible ones for beneficiary targeting.

2. Project Intervention Model

2.1 Theory of change

Table 1: FANSEP Theory of Change



2.2 Monitoring and Evaluation (M&E) Strategy

The project has designed the Monitoring and Evaluation (M&E) Strategy to facilitate project activities monitoring and evaluation. The main purpose of an M&E strategy is to setup procedures and processes of building the project M&E system capable to produce reliable data on time to support evidence-based management decision making, promote transparency and accountability, and facilitate learning. It integrates mechanism for progress and results data and information collection, processing, and reporting and documentation and dissemination of best practices and lessons.

M&E strategy is prepared to facilitate the project staff and stakeholders for efficient and effective monitoring and reporting of physical progress and periodic results of the project activities, output and outcomes based on the principle of Result Based Management (RBM) and

Theory of Change (ToC). Recording of physical progress and outputs begins consistently across selected municipalities of 8 districts (Dhanusha, Mahottari, Siraha, Saptari, Dolakha, Sindhupalchowk, Dhading and Gorkha). The cluster level M&E specialists will be responsible for updating the project MIS with periodic progress data.

The desired outcome of FANSEP is “to enhance food and nutritional security status of targeted people of selected locations of project districts of mid hills and Terai in Nepal. In order to track progress being made, monitoring of outputs and outcomes associated indicators (milestones) and methodology have been developed to ensure progress is collected on time from each PCU of the project for timely monitoring and reporting; ‘milestones’²⁰ have been developed based on result framework of PAD. The milestones are set at the end of each Nepali fiscal year, i.e, mid-July of 2019, the mid July of 2020, mid July 2021, mid-July 2022 for the overall impact to be achieved. These are presented in the M&E design.

2.3 Activity Planning and Monitoring Cycle

Project annual work plan will cover a Nepalifiscal year cyclefrom July15 to July 15. PMU with assistance of FAO TA will prepare different operational guidelines (technical) to explain, how these activities will be implemented, and the outputs expected from the activities. The progress of the delivery of project inputs will be reported through quadrimester and annual basis as stated in PAD. The progress against outputs (result framework indicators) will also be monitored in line with result framework and reported through quadrimester and annual progress report.For planning purpose, PMU develops a consolidated work plan of the project with set of targets for each year with the technical assistance of FAO TA. The concerned cluster offices will prepare annual work plan of the selected municipalities based on the workplan developed by PMU. PCU will closely coordinate with rural municipalities to implement project activities.

Once the annual work plan is approved, activities will commence and physical and financial progress of each approved activities will be reported to concerned technical officers on monthly basis (key data and information, a four monthly basis (Quadrimester – progress on activities and relevant output) and annual basis (output focused). Cluster Technical Officer (CTO)s will ensure quality of the data on the technical aspects and M&E officers ensures both accuracy of reporting and quality of work carried out in the field. The key M&E activities are stated in table 1that need to be kept updated as the project may develop additional activities as per requirement and MIS forms and formats also needs to be updated accordingly by the PMU. The key activities planned are provided in table 2 below.

²⁰ Milestones are targets set for particular indicator for specified time and provides both quantitative and qualitative description of indicator

Table 2: Key M&E Activities

Components/Subcomponents, Outputs and Activities		Unit	Year						Responsibility
			018/19	019/20	020/21	021/22	022/23	Total	
Activity 1.1	Baseline Survey of 16 RMs of 8 project Districts	Number	0	1	0	0	0	1	DIME/PMU/FAO TA
Activity 1.2	Progress review meeting (1 meeting/per year X 5 years) - PMU	Number	1	1	1	1	1	5	PMU/FAO TA
Activity 1.3	Cluster level review meeting (Quadrimester)	Number	0	12	12	12	4	40	PMU/FAO TA
Activity 1.4	Annual project survey	Number	0	0	1	1	0	2	PMU/FAO TA/External party
Activity 1.5	MIS Establishment and Operationalization	Number	0	0	1	0	0	1	PMU / FAO TA
Activity 1.6	MIS training for project staff including offline data collection process / requirements	Number	0	0	1	1	1	3	PMU/FAO TA
Activity 1.7	Mid-term evaluation	Number	0	0	0	1	0	1	External Party/PMU/FAO TA
Activity 1.8	Final evaluation end of project survey	Number	0	0	0	0	1	1	DIME/PMU/FAO TA

Source: FANSEP, M&E Strategy (unpublished/Draft), 2020

Table 2: Progress monitoring mechanism – who does what, where and when

Who	What	When	Where submitted
Field technician/Project Facilitators	Data collection (MIS/Offline) and submission of progress (from FFS/NFS, farmers group)	Monthly, 2 nd week of November, 2 nd week of March and 2 nd week of July (Annual Progress)	PCU
DIME	Baseline, Midterm, Endline Survey and report submission	Baseline - at the start (2019/20) Midterm – 2021 Endline - 2023	PMU, DIME (baseline and endline) /Third Party (mid term)
PCU Chief / Cluster Technical Specialist (M&E)	Annual Work Plan	Oct-Nov (Each year)	PMU/FAO TA
	compilation of progress data of municipalities & checking inconsistencies and validation of data	Monthly, Quadrimester Nov last week, March last week, July last week Annual (July last week)	PMU / FAO TA
	Annual progress report including progress on outputs	Annual	PMU / FAO TA
	compilation of progress data of RMs & checking inconsistencies and validation of data of RMs (MIS data / XLS data)	Monthly, Quadrimester Nov last week, March last week, July last week Annual (July last week)	Senior M&E Officer/National M&E Specialist/Concerned Technical Specialists/PMU
Senior M&E Officer / M&E Specialist, Senior Planning Officer/Technical Specialists (FAOTA)/PMU	Annual activity plan	Oct-Nov	PMU
	Progress report (Data) compile/ check inconsistencies and provide feedback to the cluster chief/cluster M&E specialists	Monthly	Submit to PMU and update MIS
	Progress report (quadrimester, semi annual, annual) including financial	MOALD (Last week of November, March and July), WB (semi annual)	Submit to MoALD, WB
ICT Specialist (MIS service provider)	Progress on MIS development, operation and maintenance	Monthly	Submit to PMU

Source: FANSEP, M&E Strategy (unpublished/Draft), 2020

3. Key Findings and Lesson Learnt

3.1 Key Achievements

Project has completed some of the key activities, which are highlighted as follows.

- MoU was signed between FANSEP and Nepal Agricultural Research Council for Technical assistance facilitation for project Component "A": Climate and Nutrition Smart Agriculture Technology and Dissemination in the following programs:
 - Validation Trials for Crop, Animals and Advanced Technology Targeted at the Farmer's School.
 - Development of Improved Package of Practices.
 - Source seeds available for food and vegetable crops.
 - Boer Goat and Poultry (Dual Purpose Backyard Supply).
- Food and Agriculture Organization Technical Assistance team has been on board and has provided continuous Technical Assistance to PMU to update PIM activities, drafting guidelines, strategies, working procedures and other necessary assistance

Following draft Guidelines, Strategies and Working Procedures have been drafted and are in the process of approval:

- Small and Matching Grant Guideline
 - M&E Strategy and Templates
 - Dairy Promotion Guideline
 - Goat Promotion Guideline
 - Rural Poultry Promotion Guideline
 - Farm Demonstration Guideline for Groups
 - Producer Group Formation Guideline
 - Climate Smart Technologies (Crop and Livestock)
 - Home and Nutrition Garden Guidelines
 - Small Irrigation Guidelines
 - Structure of Website and PMIS
 - TOR for Website and PMIS and their Contents
- The project management unit and four cluster units established and are in full operation.
 - Rural municipality selection was finalized by Project Steering Committee
 - Orientation seminar was held at project municipality level with potential stakeholders Provincial level project interaction workshops completed in province 2 and Gandaki province
 - GAP/GHP/GMP/HACCP orientation training was conducted to Project Staffs and Municipality technical Staffs
 - Human Resource Recruitment at PMU and Project Cluster Offices completed
 - Implementing Partners (service providers) selected in each project district and Field Technicians recruited.
 - Out of targeted 65,000 beneficiaries around 33,000 have been selected.
 - Grievance Redressal Mechanism (GRM) guideline was approved and Grievance Hearing Officer have been nominated both at PMU and PCUs level.

3.2 Lesson Learnt

After signing the project agreement between MoALD and the World Bank, this project suffered from some administrative, technical and financial challenges and hence field activities could not take the desired pace. However, the project has expedited its activities after the TA agreement. Now, the full sets of human resources in PMU, PCU and in the rural municipalities are available to speed up the implementation of project activities. All the experts, cluster technical officers (M&E, crop, livestock and nutrition) and field technicians recruited from FAO TA have been mobilized to assist PMU.

4. Issues, Challenges and Way-forward

4.1 Issues and Challenges

Project has built the mechanism to monitor key issues and challenges and report on them in progress reports. These issues and challenges and proposed way-forward, will be discussed in project review workshops and World Bank's supervision missions. Project steering committee and technical coordination committee will be informed about these issues. Major issues and challenges faced by project are as follows.

- Due to incomplete and delay in office establishment and managerial work after launching the project delayed delivery of project activities in field level. Therefore, government officials dedicated for the project and technical staffs envisioned by the project should be intact immediately after signing the project agreement and mobilized accordingly so as to deliver the project activities on time.
- Delay to complete hardware and software parts of the project including office personnels from government and development partners.
- Frequent change of the project director and other staffs affected smooth functioning of the project.
- Complication of treasury system and fund flow system between government and development partners also affected in the timely implementation of project activities
- There are some issues on the beneficiary selection process, which are: 1. Phase wise selection of beneficiaries create some disparities on timely interventions and results achievement within targeted beneficiaries (Early recipients may benefit more than the late recipients) 2. Limitation of human and financial resources for beneficiary selection challenged to complete the beneficiaries' selection process on time 3. The process has not adequately captured the concerns of rural municipalities as targeting approach could vary depending on the local context within and among the rural municipalities as the process and criteria is same for both hills and terai districts 4. Beneficiary selection process might not have addressed the issue of elite capture (this issue might be prominent at some point of the project as few RMs reported this issue) 5. Spillover effect to the control group can be a challenge for precise attribution of the project interventions over the expected results if the control groups are designed nearby the targeted beneficiaries or with in targeted groups.
- Weak sustainability mechanism from past project/s to current project. There are not clear mechanisms to transfer liabilities; such as, transparent handover process of hardware and software materials from past project to current project. For instance, FANSEP could not

sufficiently capitalize the knowledge and products developed during Agriculture and Food Security Project (AFSP) funded by World Bank, because of the weak institutional memory both on software and hardware parts.

- As Agricultural Development Strategy (ADS) envisage to formulate the Food and Nutrition Security Enhancement Project (FANSEP), However, there is weak working network between Agricultural Development Strategy (ADS) and project.
- Coordination with provincial and local government on project implementation among the selected project beneficiaries could be one of the challenges as interest and priority of local government may not match with FANSEP priorities.

4.2 Way-forward

Though, project suffered from various, technical, administrative and managerial challenges, the way forward for effective implementation and timely achievements of project results can be:

- The project should be formulated and designed by the national experts based on demand driven by the real farmers in Nepal.
- Project need to have continuous team effort to intact PMU and FAO TA team for effective and timely implementation of the project and address multiple challenges faced by the project.
- There should be dedicated and stable project team for the entire project period.
- Project team should frequently interact with in the team and relevant stakeholders to address the issue on the treasury system between government and development partners to avoid procedural delay while implementing project activities.
- Beneficiary selection process and identification of true beneficiaries will be context specific, which will also incorporate the genuine concerns of local governments (Rural Municipalities) and other stakeholders to avoid elite capture, better targeting and avoid spillover effect to the control groups and minimize errors as much as possible.
- FANSEP will develop a proper hand over mechanism to transfer liabilities; such as, hardware and software materials, success stories, lesson learnt and other products developed as a result of the project.
- Project will support to achieve national goals and targets by implementing and supporting to address needs of the project beneficiaries in line with ADS and other national agricultural policies.

5. References:

World Bank, 2018. International Development Association, Project Appraisal Document on a Proposed Food And Nutrition Security Enhancement Project, September 4,