Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

Ministry of Agriculture and Forestry

Department of Planning and Cooperation

AGRICULTURE FOR NUTRITION PROJECT
Endline Survey

Final Report

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1   EXECUTIVE SUMMARY

This document contains the Final Endline Survey Report for the contract N°. SSFSNP/CQS/ES/01.

The Agriculture for Nutrition (AFN) project is implemented in twelve so-called convergence districts of four northern provinces in Lao PDR, aiming to improve food security and nutrition through agricultural development. The program focuses on promoting food security and increased nutrition by improving and diversifying agricultural production. The main objectives of the project include expanding and intensifying the production of nutrition-dense plant-based foods, production, and promotion of animal-based protein for household consumption, improved post-harvest handling and food processing to strengthen year-round food security, and promotion of income generating activities, with a focus on women. The AFN project also promotes participatory village development planning, farmer nutrition schools, agricultural extension approaches, grass root farmers' groups, and value chains strengthening.

The Lao Consulting Group (LCG) conducted the endline survey to evaluate the impact of the project. The survey covered forty-eight randomly selected villages, with 1,500 households equally selected from both AFN and control villages. Data was collected using an electronic questionnaire and analysed using descriptive statistical analysis. Training was provided to 38 enumerators from four provinces and 12 districts, and quality control measures were implemented to ensure the accuracy of the data.

While no anthropometric measurements were taken during the project period as the data from the LSIS III was to be provided by the Ministry of Health, previous surveys indicate a reduction in stunting by 12.6% and underweight by 8.2% between 2011 and 2021. Between the period of the project and 2021, stunting decreased by 2.1%, and underweight decreased by 5.5%.

The average household size in the project area is 5.8 members, with a decrease from 7.2 in 2016. The gender balance is homogeneous, and the share of women as head of household is 3.3%. The average dependency ratio is 53.9%, with Phongsaly having the highest number of children per household. The Khmu ethnic group is the most represented at 39.5%. The proportion of women who have not studied is 10% higher than that of men, and 45% of the population completed primary school. Almost all households have access to electricity. The most popular crops grown in AFN vegetable gardens are herbs, mustard greens, chilies, banana, and papaya. 69% of households in AFN villages received a garden grant, 41.8% an APG Grant and 81% received at least one of the two grants available.

It was found that 85% of surveyed household owned a mobile phone, 90% a scooter or motorcycle, and 63% a television. All these numbers show an increase of around 20% over baseline.

The proportion of households that reported more than 2 months of food insecurity decreased from 10% during midline to 5% during the endline survey. There was no baseline data collected.

The project showed that the introduced technologies (PARs) by the project were readily taken up by the farmers. If we calculate only for Agriculture Production Groups (APG) we calculate that 10,575 APG households have adopted technologies introduced by the project, defined by the adoption of at least 3 techniques promoted by the project. If we include homegarden beneficiaries, the total households that adopted technologies jumps to 20,630.

The economic situation was unstable and unpredictable due to global events like the COVID-19 pandemic and the energy resource crisis. Despite the high inflation rate of the dollar and the depreciation of the local currency, there was a clear improvement in the income of beneficiaries in the project implementation area, with an average total income of LAK 31.42 million. The poverty line was re-estimated at 326 USD due to inflation, and the beneficiary populations of the project below the poverty level was 46.4%.

With normal inflation rates, it was calculated that the population below the poverty line could have been only 30.2%. In addition, 59.2% of the total household income was from on-farm income, and the number of households with a 30% increase in on-farm income from baseline increased.

A self-assessment by the households showed that 32.3% of the households in the AFN villages felt their financial situation had improved significantly, with 57.8% responding that their situation had improved, while only 13.4% of the control village households felt they were better off financially. The Khmu community had the highest percentage of households (41.5%) reporting better financial conditions.

The average on-farm income shares at three main survey periods showed a total increase of 92% in on-farm income, with increases varying across provinces, with the least significant increase being recorded in Phongsaly and Houaphan provinces.

The AFN project has successfully adapted 19 new technologies to the local level, with 79% of the beneficiary farmers very satisfied with the adoption of these new technologies. 61.2% of farmers report being often accompanied by the project technical staff. The project has led to a significant increase in sales, with an average of LAK 21 million per household (USD 1,679) in 2022, up 207% from pre-project levels. Households that received both Garden Grant and APG Grant saw the largest increase in production and sales, with a 77% increase in production and 167% increase in sales. For households that solely received a garden grant, or an agricultural Production Group grant, overall crop and livestock production rose by 168% and 87%, respectively, leading to an increase in the average household income.

Looking at dietary diversity, we can see the largest increase in the Minimum Acceptable Diet (MAD) for children under 2 years, both over baseline as well as a big difference between AFN and non-AFN villages. Overall Minimum Dietary Diversity for Women (MDD-W) remained high with almost no increase over the midline, 89% of women scoring higher than 5 (consuming from 5 or more food groups per day out of a maximum of 10 food groups) versus 88% at midline.

The study measured KAP indicators to understand household knowledge about food and cultural practices. The results showed that the understanding of dietary practices and cultural norms was high, while understanding of micronutrient intake was lower. A comparative table of KAP questions between the baseline study and final study indicated an overall improvement in knowledge and understanding.

The calculated values of the endline survey results over the Logframe indicators shows that AFN has managed to exceed most of the indicators in the Logframe. The Development Objective of reaching 21,000 households above the poverty line could not be reached (85%) mainly due to the worsening economic situation and increased inflation during 2022. With "normal" inflation rates, the project should have reached around 23,000 households above the poverty line or about 110% of the indicator value.

2   ບົດສະຫຼຸບການຈັດຕັ້ງປະຕິບັດ

ເອກະສານນີ້ປະກອບມີບົດລາຍງານການສຳຫຼວດຂັ້ນສຸດທ້າຍສຳລັບສັນຍາ N°. SSFSNP/CQS/ES/01.

ໂຄງການກະສິກຳເພື່ອໂພຊະນາການ (AFN) ແມ່ນໄດ້ຈັດຕັ້ງປະຕິບັດຢູ່ 4 ແຂວງພາກເຫນືອຂອງ ສປປ ລາວ, ແບບໃສ່ປັບປຸງຄ້ຳປະກັນສະບຽງອາຫານ ແລະ ໂພຊະນາການຜ່ານທາງຜັດທະນາກະສິກຳ. ໂຄງການ ທັງໝ່າວໄດ້ສຸມໃສ່ການຊຸກຍູ້ການຄ້ຳປະກັນດ້ານສະບຽງອາຫານ ແລະ ເພີ່ມຂຶ້ນດ້ານໂພຊະນາການ ໂດຍ ການບັບບຸງ ແລະ ການຜະລິດກະສິກຳທີ່ມີຄວາມຫຼາກຫຼາຍ. ຈຸດປະສົງຕົ້ນຕໍຂອງໂຄງການລວມມີການຂະຫຍາຍ ແລະ ຮັກແຫນ້ນການຜະລິດອາຫານທີ່ມີຫຼາດອາຫານຈາກພືດ, ການຜະລິດ ແລະ ການສ່ງເສີມຫາດໂປຼຕີນຈາກສັດເພື່ອບໍລິໂພກໃນຄົວເຮືອນ, ການບັບບຸງການຈັດການຫ່ຽງການກັບກ່ຽວ ແລະ ການບຸງແຕ່ງສະບຽງອາຫານ ເພື່ອສ້າງຄວາມເຂັ້ມແຂງດ້ານຄ້ຳປະກັນສະບຽງອາຫານຕະຫຼອດປີ. ແລະ ການສ່ງເສີມອົງການນການສ້າງລາຍໄດ້, ໂດຍໄດ້ສຸມໃສ່ແມ່ຍິງ. ໂຄງການ AFN ຍັງສ່ງເສີມການອາງແຜນພັດທະນາບ້ານແບບມີສ່ວນຮ່ວມ, ໂຮງຮຽນໂພຊະນາການຂອງຊາວກະສິກອນ, ວິທີການສ່ງເສີມກະສິກຳ, ກຸ່ມຊາວກະສິກອນຮາກຫຍ້າ ແລະ ການເສີມສ້າງລະບົບຕ່າງໂສ້ມຸນຄ່າ.

ບໍລິສັດທີ່ປຶກສາ LCG ຮັບຜິດຊອບການສຳຫຼວດຂັ້ນສຸດທ້າຍເພື່ອປະເມີນໂຄງການຊຸດຄັ້ນ48 ບ້ານທີ່ຢູ່ຈຸດເລືອກ 1,500 ຄົວເຮືອນເລືອກຫຼາຍກັບຈາກທັງ AFN ແລະບ້ານຄວບຄຸມຂໍ້ມູນແບບສອບຖາມ ສະຫຼຸບ ແລະ ວິ ເຄາະສະຖິຕິ.ການຝຶກອົບຮົມໄດ້ຖືກສະໜອງງໃຫ້ 38 ພະນັກງານເມືອງ ຂອງ 4 ແຂວງ 12 ເມືອງ ແລະ ມາດຕະການຄວບຄຸມຄຸນນະພາບໄດ້ຖືກປະຕິບັດເພື່ອຮັບປະກັນຄວາມຖືກຕ້ອງຂອງຂໍ້ມູນ.

ໃນຂະນະທີ່ບໍ່ມີການວັດແທກ anthropometric ໄດ້ຖືກປະຕິບັດໃນໄລຍະເວລາຂອງໂຄງການຍ້ອນວ່າຂໍ້ມູນຈາກ LSIS III ແມ່ນໃຫ້ໂດຍກະຊວງສາທາລະນະສຸກ, ການສຳຫຼວດທີ່ຜ່ານມາຊີ້ໃຫ້ເຫັນການຫຼຸດລົງຂອງ stunting ໂດຍ 12,6% ແລະ underweight 8,2% ລະຫວ່າງ 2011 ແລະ 2021. ລະຫວ່າງໄລຍະເວລາ. ຂອງໂຄງການ ແລະ 2021, stunting ຫຼຸດລົງ 2,1%, ແລະ underweight ຫຼຸດລົງ 5,5%.

ຂະຫນາດຄົວເຮືອນໂຄງການຄື 5,8 ຄົນໂດຍປະຊາກອນຈາກ 7,2 ໃນ 2016 ຂະຫນາດ ຄົວເຮືອນສະເລ່ຍ ໃນເຂດ ໂຄງການແມ່ນ 5,8 ສະມາຊິກຄອບຄົວ, ຫຼຸດລົງຈາກ 7,2 ໃນປີ 2016. ຄວາມຄຸ້ນດ່ຽງລະຫວ່າງຍິງ-ຊາຍມີຄວາມເປັນ ດຸກະພາບ, ສ່ວນແບ່ງຂອງແມ່ຍິງທີ່ເປັນຫົວໜ້າຄົວເຮືອນແມ່ນ 3,3%. ອັດຕາສ່ວນການເພິ່ງພາອາໄສສະເລ່ຍແມ່ນ 53,9%,ແຂວງຜົ້ງສາລີ ມີຈຳນວນບຸກຄົນກ້ອນຄ້ອຍຕ່ຳຄອບຄົວສູງສຸດ. ຊົນເຜ່າຂະມຸ ຮວມ 39,5%. ອັດຕາສ່ວນ ຂອງ ແມ່ຍິງທີ່ບໍ່ໄດ້ສຶກສາແມ່ນສູງກວ່າຜູ້ຊາຍ 10%, ແລະ 45% ຂອງປະຊາກອນທຽມຈັບຊັ້ນປະຖົມ. ເກືອບທຸກຄົວເຮືອນ ມີໄຟຟ້າໃຊ້. ພືດທີ່ນິຍົມປູກໃນສວນຜັກ AFN ແມ່ນພືດສະໜຸນໄພ, ຜັກກາດ, ຫມາກເຜັດ, ຫມາກຖົ້ວ ແລະ ຫມາກຫ່ງ. 69% ຂອງຄົວເຮືອນໃນບ້ານ AFN ໄດ້ຮັບການຊ່ວຍເຫຼືອດ້ານສວນ, 41.8% ການຊ່ວຍເຫຼືອວ່າ APG ແລະ 81% ໄດ້ຮັບຢ່າງຫນ້ອຍໜຶ່ງຂອງສອງການຊ່ວຍເຫຼືອ.

85% ຂອງຄົວເຮືອນທີ່ໄດ້ສຳຫຼວດເປັນເຈົ້າຂອງໂທລະສັບມືຖື, 90% ເປັນ ເຈົ້າຂອງ ລົດຈັກ, ແລະ 63% ມີໂທລະທັດ. ຕົວເລກທັງໝົດເຫຼົ່ານີ້ສະແດງໃຫ້ເຫັນການເພີ່ມຂຶ້ນປະມານ 20% ຫຼາຍກວ່າ ເສັ້ນພື້ນຖານ. ອັດຕາສ່ວນຂອງຄົວເຮືອນທີ່ລາຍງານຄວາມໝັ້ນຄົງ ອາຫານຫຼາຍກວ່າ 2 ເດືອນຈາກ 10% ໃນການເດືອນເປັນ 5% ການສຶກສາຂັ້ນສຸດທ້າຍຂອງຂໍ້ມູນພື້ນຖານ.

ໂຄງການໄດ້ນຳສະເໜີ PAR ໂດຍໂຄງການທັງໝ່າວພ້ອມນຳໃຊ້ໂດຍກະສິກຳກັບສະໄໝ, ສະເພາະກຸ່ມ APG, 10,575 ຄົວເຮືອນ ເຕັກໂນໂລຊີທີ່ແນະນຳໂດຍໂຄງການກຳນົດໄວ້. ໂດຍເຕັກນິກແຜນຜັງ 3 ດ້ານການສ່ງເສີມໂດຍໂຄງການ

ຖ້າພວກເຮົາລວມເອົາຜົນປະໂຫຍດດຮັດສອນໃຫ້ມີຄອບຄົວທັງໝົດມີເຕັກໂນໂລຈິຈະເປັນ 20,630 ຄົວເຮືອນ

ຖ້າພວກເຮົາຄິດໄລ່ພຽງແຕ່ສຳລັບກຸ່ມການຜະລິດກະສິກຳ (APG) ພວກເຮົາຄິດໄລ່ວ່າ 10,575 ຄົວເຮືອນ APG ໄດ້ນຳໃຊ້ເຕັກໂນໂລຍີທີ່ແນະນຳໂດຍໂຄງການ, ກ່າມົດໂດຍການຮັບຮອງເອົາຢ່າງໜ້ອຍ 3 ເຕັກນິກທີ່ຖືກສົ່ງເສີມໂດຍໂຄງການ. ຖ້າລວມເອົາຜູ້ທີ່ໄດ້ຮັບຜົນປະໂຫຍດຈາກສອບຄົວ, ຈຳນວນຄົວເຮືອນທັງໝົດທີ່ນຳໃຊ້ເຕັກໂນໂລຍີເພີ່ມຂຶ້ນເປັນ 20,630 ຄົນ.

ສະຖານະການບໍ່ຍຸດຕ້ຳ ແລະຄາດບໍ່ເຖິງເຫດການອັນຕຸງອັນ ການປ່ຽນແປງໃຫຍ່ຂອງໂຄວິດ-19 ແລະວິກິດ ການຊັບພະຍາກອນ ຍັງວ່າ່ອັດຕາເງິນເຟີ້ຂອງເງິນທົນຈະລະດັບສູງ ຄ່າໃຊ້ຈ່າຍອ່ອນຂອງສະກຸນເງິນທ້ອງທຶ່ນແຕ່ລະດັບສູງຂອງ. ຜູ້ໄດ້ຮັບຜົນປະໂຫຍດໂຄງການດຳເນີນໂຄງການກັບກູ້ໂດຍກຸ່ມລວມມູນນຄ່າ 31,420,000 ກິບ ສະພາບຄວາມຍາກຈົນ ຄາດຄະເນໃໝ່ເປັນ 326 ສະຖຕິໃໝ່ ສະພາບເສດທະກິດເປ່ ແລະ ປະຊາກອນຍາດເຮົາຈາກໂຄງການລະດັບສູງ. ຄວາມຫຍຸ້ງຍາກຄື 46.4%. ນອກຈາກນັ້ນ, 59.2% ຂອງລາຍຮັບ ທັງໝົດຂອງຄົວເຮືອນແມ່ນມາຈາກລາຍຮັບກະສິກຳ, ແລະຈຳນວນຄອບຄົວທີ່ມີລາຍໄດ້ຈາກກະສິກຳເພີ່ມຂຶ້ນ 30% ຈາກພື້ນຖານເພີ່ມຂຶ້ນ

ການປະເມີນຕົນເອງຂອງຄົວເຮືອນສະແດງໃຫ້ເຫັນວ່າ 32.3% ຂອງຄົວເຮືອນໃນບ້ານ AFN ຮູ້ສຶກວ່າສະຖານະການທາງ ດ້ານການເງິນດີຂຶ້ນຢ່າງໜ້ອຍໜາຍ, 57.8% ຕອບສະໜອງວ່າສະຖານະການຂອງຄົວເຮືອນດີຂຶ້ນ, ໃນຂະນະທີ່ບ້ານຄອບຄຸມພຽງແຕ່ 13.4% ຮູ້ສຶກວ່າຄົວເຮືອນດີຂຶ້ນ. ທາງດ້ານການເງິນ. ຊົນເຜົ່າຂະມຸ ມີອັດຕາສ່ວນຄົວເຮືອນສູງສຸດ (41.5%) ທີ່ລາຍງານສະພາບການເງິນດີຂຶ້ນ.

ສ່ວນແບ່ງລາຍຮັບກະສິກຳ ໂດຍສະເລ່ຍໃນ 3 ໄລຍະການສຳຫຼວດຕົ້ນຕໍ ສະແດງໃຫ້ເຫັນວ່າ ລາຍຮັບກະສິກຳເພີ່ມຂຶ້ນທັງໝົດ 92% ເພີ່ມຂຶ້ນໃນແຕ່ລະແຂວງ, ເຊິ່ງເພີ່ມຂຶ້ນຢ່າງໜ້ອຍໜາຍແມ່ນແຂວງຜົ້ງສາລີ ແລະ ທ່ອພັນ.

ໂຄງການ AFN ໄດ້ສ້າງວັດການນັບປ່ຽນ 19 ເຕັກໂນໂລຈິໃໝ່ໃຫ້ເຂົ້າກັບທ້ອງທຶ່ນ, 79% ຂອງຊາວ ກະສິກອນທີ່ໄດ້ຮັບຜົນປະໂຫຍດມີຄວາມພໍໃຈຫຼາຍຕໍ່ການຮັບຮອງເອົາເຕັກໂນໂລຈິໃໝ່ເຫ່ານີ້. 61.2% ຂອງຊາວກະສິກອນລາຍງານວ່າ ມັກຈະໄປກັກຖານວິຊາການຂອງໂຄງການໄປນ້າ. ໂຄງການດັ່ງກ່າວໄດ້ຮັດໃຫ້ຍອດຂາຍເພີ່ມ ຂຶ້ນຢ່າງໜ້ອຍໜາຍ, ໂດຍສະເລ່ຍ 21 ລ້ານລ້ານກິບຕໍ່ຄົວເຮືອນ (1,679 ໂດລາ) ໃນປີ 2022, ເພີ່ມຂຶ້ນ 207% ຈາກລະດັບກ່ອນໂຄງການ. ຄົວເຮືອນທີ່ໄດ້ຮັບທັງ Garden Grant ແລະ APG Grant ເຫັນວ່າການຜະລິດ ແລະ ການຂາຍເພີ່ມຂຶ້ນໜາຍທີ່ສຸດ, ການຜະລິດເພີ່ມຂຶ້ນ 77% ແລະການຂາຍເພີ່ມຂຶ້ນ 167%. ສຳລັບຄົວເຮືອນທີ່ ໄດ້ຮັບການຊ່ວຍເຫຼືອລ້າຈາກສອນ, ຫຼືການຊ່ວຍເຫຼືອຂອງກຸ່ມການຜະລິດກະສິກຳ, ການຜະລິດກະສິກຳ ແລະການບູລິງສັດໂດຍລວມເພີ່ມຂຶ້ນ 168% ແລະ 87% ຕາມລຳດັບ, ເຮັດໃຫ້ລາຍຮັບສະເລ່ຍຂອງຄົວເຮືອນເພີ່ມຂຶ້ນ.

ເມື່ອເບິ່ງຄວາມໝາກໝາຍທາງດ້ານອາຫານ, ພວກເຮົາສາມາດເຫັນການເພີ່ມຂຶ້ນທີ່ໃຫຍ່ທີ່ສຸດຂອງອາຫານທີ່ຍອມຮັບໄດ້ຕ່ຳ◦ສຸດທີ່ (MAD) ສຳລັບເດັກນ້ອຍຕ່ຳກວ່າ 2 ປີ, ທັງໃນໄລຍະພື້ນຖານເຊິ່ງດຽວກັບກັບຄວາມແຕກຕ່າງທີ່ໃຫຍ່ໜ້ອງລະຫວ່າງບ້ານ AFN ແລະບ້ານທີ່ບໍ່ແມ່ນ AFN. ໂດຍລວມແລ້ວຄວາມໝາກໝາຍທາງດ້ານອາຫານຕ່ຳສຸດສຳລັບແມ່ຍິງ (MDD-W) ຍັງຄ້ງຢູ່ໃນລະດັບສູງ ໂດຍເກືອບບໍ່ມີການເພີ່ມຂຶ້ນໃນໄລຍະກາງ, 89% ຂອງແມ່ຍິງໄດ້ຄະແນນສູງກວ່າ 5 (ບໍລິໂພກຈາກ 5 ກຸ່ມອາຫານ ຫຼືຫຼາຍກວ່ານັ້ນຕ່ມີຈາກກຸ່ມອາຫານສູງສຸດ 10 ກຸ່ມ) ທຽບກັບ 88. % ຢູ່ທີ່ເສັ້ນການງ.

ການສຶກສາໄດ້ວັດແທກກຄ່ອຊີ້ວັດ KAP ເພື່ອເຂົ້າໃຈຄວາມຮູ້ຂອງຄົວເຮືອນກ່ຽວກັບອາຫານ ແລະການປະຕິບັດອັດທະນະທຳ. ຜົນໄດ້ຮັບສະແດງໃຫ້ເຫັນວ່າຄວາມເຂົ້າໃຈກ່ຽວກັບການປະຕິບັດດ້ານອາຫານແລະມາດຕະຖານອັດທະນ

ະທຳແໜ່ນສູງ, ໃນຂະນະທີ່ຄວາມເຂົ້າໃຈກ່ຽວກັບການໄດ້ຮັບສານອາຫານຈຸນລະພາກແໜ່ນຕ່ຳ.
ຕາຕະລາງປຽບທຽບຂອງຄ່າຄວາມ KAP
ລະຫວ່າງການສຶກສາພື້ນຖານແລະການສຶກສາຂັ້ນສຸດທ້າຍຊີ້ໃຫ້ເຫັນເຖິງການປັບປຸງໂດຍລວມຂອງຄວາມຮູ້ແລະຄວາມເຂົ້າໃຈ.

ມູນຄ່າການຄິດໄລ່ຂອງຜົນໄດ້ຮັບການສຳຫຼວດຂັ້ນສຸດທ້າຍສະແດງໃຫ້ເຫັນວ່າໂຄງການ AFN
ໄດ້ຄຸ້ມຄອງຫຼາຍກວ່າ ຕົວຊີ້ວັດສ່ວນໃຫຍ່ໃນ Logframe. ເປົ້າໝາຍການພັດທະນາເພື່ອບັນລຸ 21.000
ຄົວເຮືອນເຫັນເສັ້ນຄວາມທຸກຍາກ ບໍ່ສາມາດບັນລຸໄດ້ (85%)
ຕົ້ນຕຳແໜ່ນຍ້ອນສະພາບເສດຖະກິດໂລກລ່າງຫຼາຍ ແລະ ອັດຕາເງິນເຟີ້ທີ່ເພີ່ມຂຶ້ນໃນປີ 2022.
ຖ້າອັດຕາເງິນເຟີ້ປົກກະຕິ (~2%), ໂຄງການຄອບບັນລຸໄດ້ປະມານ 23.000
ຄົວເຮືອນສູງກວ່າຄວາມທຸກຍາກ. ເສັ້ນຫຼືປະມານ 110% ຂອງມູນຄ່າຕົວຊີ້ວັດ.

TABLE OF CONTENT

3   ABBREVIATIONS

AFN	Agriculture for Nutrition Project
APG	Agriculture Production Group
COI	Core Outcome Indicator (IFAD)
DAEC	Department of Agriculture Extension and Cooperatives (MAF)
DAFO	District Agriculture and Forestry Office
DoPC	Department of Planning and Cooperation (MAF)
DONRE	District Office of Natural Resources and Environment
FG	Farmers Group
GAFSP	Global Agriculture and Food Security Program
GIS	Geographic Information System
GoL	Government of Lao People's Democratic Republic
HDDS	Household Dietary Diversity Score
HH	Households
HPH	Houaphan province
IDDS	Individual Dietary Diversity Score
IFAD	International Fund for Agriculture Development
KAP	Knowledge, Attitude, and Practices
LAK	Lao Kip
LF	Lead Farmer
LSIS	Lao Social Indicator Survey
LWU	Lao Women's Union
MAD	Minimum Acceptable Diet
MAF	Ministry of Agriculture and Forestry
MDD-W	Minimum Dietary Diversity for Women
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MTR	Mid Term Review
NAFRI	National Agriculture and Forestry Research Institute
NNSPA	National Nutrition Strategy to 2025 and Plan of Action 2016 – 2020
NPCO	National Project Coordination Office
ODX	Oudomxai province
PAFO	Provincial Agriculture and Forestry Office
PPCP	Public-Private Community Partnership
PSL	Phongsaly province

SSFSNP   Strategic Support for Food Security and Nutrition Project

USD   United States Dollar

VDP   Village Development Plan

WFP   UN-World Food Programme

XKH   Xiengkhouang province

4 INTRODUCTION

4.1 CONTEXT AND PROJECT OBJECTIVES

Lao People's Democratic Republic (PDR) has made significant progress towards reducing its overall poverty rate. However, many people, especially those living in the hill and mountain regions, continue to struggle with food insecurity and poor nutrition. Agricultural development in these areas is faced by big challenges under increasingly extreme and erratic weather events. Poverty and undernutrition remain deep-rooted in these remote areas where few off-farm income opportunities exist.

The causes of undernutrition in Lao PDR are multi-faceted and multi-sectoral. They range from factors that are determined before the child is born - such as mother's stature, education, health, care, diet and age during pregnancy - to factors affecting the child after birth, like inadequate breastfeeding as well as low macro- and micro-nutrient intake due to low dietary diversity, and poor hygiene and sanitary environment, especially open defecation. Most factors are influenced by the lack of appropriate knowledge as well as social, gender, and cultural norms and practices.

Recent FAO and WFP analysis shows that a typical household in Lao PDR has sufficient access to food to cover their required calorie intake. However, diversity in diet is low, with rural households consuming an average of 3 out of 10 major food groups. Poor feeding practices for infants and young children compound this problem, as children under 2-year-old are less likely to be fed certain important food groups even when they are available in the household. Stunting rates on the national level remain high at 33% for children under 5 years as found from the last national survey in 2017 (LSIS-II). In AFN provinces, the average stunting rate is even higher at 45.9%. Although stunting rates had decreased since the first national survey in 2011, there is a possibility that the recent crises such as the COVID pandemic and the economic hardships and increased food and fuel prices, may have a negative impact on both poverty and malnutrition[1].

The government of Lao PDR, funded by the Global Agriculture and Food Security Program (GAFSP) and Supervised by the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP) have implemented the Strategic Support for Food Security and Nutrition Project (SSFSNP) or Agriculture for Nutrition project (AFN) in 12 target districts of four northern provinces: Phongsaly, Oudomxai, Xiengkhouang and Houaphan from 2016 to the end of 2022. These projects focus on the 22 priority interventions outlined in the NNSPA to improve nutrition in Lao PDR.

The project promotes food security and increased nutrition through improved and diversified agricultural production. The key interventions include:

- Participatory village development planning (VDP) is conducted at all 400 project villages, and village agriculture investments are financed per the VDP identified priorities; multi-sector district planning for NNSPA activities is facilitated;
- The project organizes Farmer Nutrition Schools in all project villages with the aim to improve household and women's diets. In addition, small garden/farm investments are implemented for female farmers to increase the production of nutritious food;
- The agricultural extension approach is diversified to include Farmer-to-Farmer extension methodologies;

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[1] https://www.vientianetimes.org.la/freeContent/FreeConten_More102.php

- Grass root farmers' groups are developed, capacitated and their required farm investments are co-financed to improve the semi-commercial production of nutritious food; and
- Value chains are strengthened through co-investments with lead enterprises, to create employment and sustainably increase demand and production of farm products.

The project supports the four agriculture interventions of the 22 priority interventions of the National Nutrition Strategy under a "convergence" approach with different government ministries and departments. The four priority agricultural interventions are as following:

1. Expanding and intensifying the production of nutrition-dense plant-based foods;
2. Production and promotion of animal-based protein for household consumption;
3. Improved post-harvest handling and food processing to strengthen year-round food security; and
4. Promotion of income generating activities, with a focus on women.

AFN has been targeting the most food and nutrition insecure districts in the north of Lao PDR and used targeting criteria for village selections based on poverty, remoteness, malnutrition, and climate change vulnerability. AFN specifically targets identified poor households and women (depending on the project activity at least 40-50%), including women-headed households.

With the project closing end of December 2022, MAF has contracted the Lao Consulting Group (LCG) to conduct the final endline survey. The design of the endline survey consists of a quantitative household survey of 1,500 households living in the project area.

The endline survey sample consist of 750 households selected from up to 50 project target villages, divided over 12 districts of the 4 beneficial provinces and 750 households selected as control group.

The endline survey implementation is following the Core Impact Indicators (COI) IFAD Guidelines and appendices and the GAFSP Revised M&E Plan 2022 (Tier 2 and Tier 3 indicators). The Core Impact Indicators are measured as below:

- **Households reporting adoption of new/improved inputs, technologies, or practices:**
  - o The project has introduced 29 different technology packages (PAR) of which around 12 are the most common practiced, the project M&E system tracks main technologies for demonstrations and Agricultural Production Group (APG) support;
  - o AGPs household members technology adoption; and
  - o Beneficiaries of home garden grants.
- **Women reporting minimum dietary diversity (MDD-W). Women in project area of 15-49 years of age, consume at least 5 out of 10 defined food groups daily; and**
  - o All members of households that have received nutrition-related information through farmer nutrition school participation was assesses.
- **Households with improved nutrition Knowledge, Attitudes, and Practices (KAP).**
  - o All households that have received nutrition-related information through farmer nutrition school participation was surveyed
  - o KAP components that was surveyed are:
    - Component D: Intake of micronutrients
    - Component E: Feeding practices/Complementary feeding
    - Component F: Food cultural practices

In addition to the COI IFAD Guideline, relevant indicators were also surveyed:

- **Household income:**

- o Households out of poverty by increasing per capita income from the current level ($270/year) to more than $326/year by project-end.
  - o Households participating in the project activities that increase their income by at least 30 percent.

- **Food Security:**
  - o Households with improved food security, measured as a MAHFP (Months of Adequate Household Food Provisioning) score of 10.0 or higher;
  - o Increase in production and sales of crops and livestock, including high-quality and nutrition-dense foods.

- **Dietary Diversity:**
  - o Proportion of children 6–23 months of age who receive a Minimum Acceptable Diet (MAD) (WFP Country Strategic Plan 2022-2026 indicator).
  - o Household Dietary Diversity Score (HDDS)
  - o Individual Dietary Diversity Score (IDDS) for children under 5 years old

The Logframe project goal indicator of stunting should be measured through the data from the Lao Social Indicator Survey (LSIS III) provided by Ministry of Health. However, data from the third round is not yet available as the data collection, originally planned for 2022, was delayed due to the COVID-19 pandemic impacts.

Secondary data for stunting was used to estimate the progress up to now.

4.2 REFERENCE DOCUMENTS

The baseline report produced by Indochina Research (Laos) Ltd, the midline impact survey report and the annual impact survey 2021, produced by AFN-NPCO are the reference documents for the endline study. The statistics produced from those documents were extracted and used in this report for comparison analysis. Furthermore, the AFN M&E database was used to extract data where needed.

Appendixes, databases, and sample questionnaires produced for this endline survey can be found in the annexes or in electronic format.

4.3 OBJECTIVES OF THE REPORT

The purpose of this report is to present predefined indicators, compare them between baseline, midline, endline, and determine if the initial target was achieved. By examining these indicators and comparing them at different points in time, we can gain a better understanding of the progress that has been made and identify areas that may need further attention. By determining whether the initial target was achieved, we can assess the effectiveness of the strategies that were put in place and identify adjustments for the next project phase.

5   PROJECT INDICATOR

Project indicators are quantifiable measures used to track the progress of a project and determine if it is achieving its goals. The AFN project indicators are used to assess the performance of project implementation. There are 3 types of project indicators, outcome indicators, which measure the direct changes caused by the project, output indicators, which measure the effectiveness of the project in achieving its objectives and, impact indicators, which measure the completion of the project goal and development objective contribution to the community. Project indicators measured in this report are quantitative. The final goal of project indicators is to communicate the progress of the project to various audiences, such as donors, partners, beneficiaries, and community members.

5.1   LOGFRAME

The project logframe or logical framework, is the table of indicators defined by the AFN project management and IFAD as the reference summary table to track progress of project implementation.

The logframe compares the progression of the main indicators on Goal, Objective, Outcome and Output levels along the lifetime of the project.

The endline indicators used below are the result of a clear calculation obtained by the number of beneficiaries reported by AFN project management and the proportion of the target population estimated from the socio-economic data of the endline survey.

The total number of beneficiaries in the project area reported by AFN M&E team are indicated in the following table:

Table 1: Household beneficiaries in project area.

AFN Household Beneficiaries	Households
Direct and Indirect beneficiaries	33,294
From Agriculture activities	13,915
From Nutrition Activities	22,970
From Agriculture & Nutrition & Infrastructure Activities	31,557

Socio-economic statistics extracted from the endline survey result are shown in the following table:

Table 2: Proportion in percentage of household for each outreach category.

Outreach	Proportion
Average Members per Household	5.8
Males	51%
Females	49%
Indigenous people (non-Lao)	79%
Women Headed Household	3%

Extrapolation of the indicators over the total project area is obtained through the following formula:

$$\textbf{Indicators } = \textbf{ AFN HH Beneficiaries (HH) x Outreach (\%)}$$

The results of the Endline Survey, together with additional output data from the project M&E database are combined in below Logframe table. This is the Logframe as updated up to December 2022, to be used for the final Project Completion Report (PCR)

Table 3 : Logframe table

Results Hierarchy	Indicators				Means of Verification			Cumulative
	Name	Baseline	Mid-Term	End Target	Source	Frequency	Responsibility	
Outreach	**1 Persons receiving services promoted or supported by the project**				Project Report	Annual	project management	
	Males - Males			113,900				**90,434**
	Females - Females			113,900				**120,250**
	Total number of persons receiving services - Number of people			227,800				**210,684**
	1.a Corresponding number of households reached				Project Report	Annual	project management	
	Households - Households			34,000				**31,557**
Project Goal Contribute to reduced extreme poverty and malnutrition	**Incidence of malnutrition (height for age) among two year old children reduced by 10%**				LAOS Social Indicator Survey (LSIS-III) for Children under 5	every 5 years (2022)	Ministry of Health	
	malnutrition - Percentage (%)	47.0		42.3				**44.9**
Development Objective Improved and diversified climate resilient agricultural production and household nutrition enhance life prospects	**21,000 HH out of poverty by increasing per capita income from the current level to more than $270/yr by Project-end**				Baseline Survey	Mid line and end line	project management	
	Households - Number		8,000	21,000				**17,846**
	At least 21,000 households with improved food security (measured as a HFIAS score of 7.0 or lower)				Baseline Survey using score	Mid line and end line	project management	

	Households - Number		8,000	21,000	of 11 MAHFP			**31,663**
Outcome 1. Strengthened public services	**14 Technical Service Centers improved capacity and support to target farmers**				Project M&E	Annual	project management	
	service centres - Number			14				**14**
	1.2.2 Households reporting adoption of new/improved inputs, technologies or practices				Project M&E	Annual	project management	
	Households - Households			10,000				**20,630**
Output 1.1 Build government staff capacities and procedures and technical packages to support and converge community implementation of selected National Nutrition Strategy interventions	**At least 9 guidelines and tools developed and implemented on a project-wide level: Finance, procurement, planning M&E, PPCP, APG, Garden Grand, Infrastructure, PAR, and F2F**				Project M&E	Annual	project management	
	guidelines/tools - Number			9				**9**
Outcome 2. Community-driven agriculture-based nutrition interventions established	**300 Village Development Committees have a basic convergence plan on food and nutrition**				Project M&E	Annual	WFP	
	Basic convergence plan - Number		100	300				**365**
	1.2.8 Women reporting minimum dietary diversity (MDDW)				Baseline Survey	Mid line and end line	project management	
	Women (number) - Females			28,000				**34,750**
Output 2.1 Planning for improved nutritional outcomes	**12 District Nutrition Committees hold at least two meeting per year to develop, coordinate and implement a convergence plan on food and nutrition**				Project M&E	Annual	WFP	

	District - Number			12					**12**
	28,000 beneficiary households participate in VDP preparation				Project M&E	Annual	WFP		
	Households - Number			28,000					**33,095**
Output 2.2 Women-led improvement in household nutrition	**1.1.8 Households provided with targeted support to improve their nutrition**				Baseline Survey	Mid line and end line	project management		
	Households - Households			21,000					**22,970**
Outcome 3. Sustainable and inclusive market-driven partnerships established	**10,000 HHs participating in the project activities increase income by 30%.**				Baseline Survey	Mid line and end line	project management		
	Households - Number			10,000					**19,506**
Output 3.1 Profitable investment in nutrient-sensitive, climate-adapted agriculture	**1.1.2 Farmland under water-related infrastructure constructed/rehabilitated**				Project M&E	Annual	project management		
	Hectares of land - Area (ha)			300					**560**
	2.1.5 Roads constructed, rehabilitated or upgraded				Project M&E	Annual	project management		
	Length of roads - Km	0	200	400					**757**
Output 3.2 Linking farmers to markets	**At least 7 private or public-private partnership agreement signed and implemented**				Project M&E system	Annual	project management		
	Agreement Implemented - Number			7					**7**
	2,000 HHs benefiting from the PPCP				Project M&E	Annual	project management		
	Households - Number			2,000					**2,832**

6   ENDLINE METHODOLOGY AND SAMPLING

This chapters outlines the processes and mechanisms of how the survey was designed and conducted. Specific attention was paid to sampling design and training on data collection techniques.

6.1   SAMPLE SIZE AND VILLAGE SELECTION

The Villages were selected using a random sampling from the sampling frame provided by the AFN-NPCO. A total of 48 villages were selected randomly, which constitutes 24 AFN villages and 24 control villages. 750 Households of the 24 control villages were selected randomly with a minimum quota of 5 HH meeting the criterion of having child age of 0-23 and 24-59 months. The control villages were selected in the same 12 AFN districts but in villages where no AFN activities have taken place. However, these villages fall inside the convergence districts and as such may have received support from other projects and donors.

The other 750 households interviewed of the 24 AFN villages was proportionally selected in term of number of beneficiaries per main activities: Agriculture Production Group, Farmer Nutrition Schools and Home Garden Development.

In order to accommodate logistics and time travel constraint, 5 villages were intentionally replaced due to extreme road access conditions. The total endline sampling covers 1,500 Household.

The AFN target population is estimated at 33,294 households distributed in 387 Villages. The number of villages is not 400 as some villages were merged together or relocated and merged with another village as is common in Laos.

The two tables show detail statistics of the population in the project area from the census 2015 and the number of project beneficiaries distributed by project activities, districts, and villages.

Table 4 : Demographic and project beneficiaries over the project area.

Province	District	HH Census 2015	Pop. Census 2015	Total villages Census 2015	AFN villages	Population AFN villages 2019	HH direct beneficiaries (Agriculture)	HH direct beneficiaries (Nutrition)	HH direct beneficiaries	% of direct beneficiaries (Agriculture)	% of direct beneficiaries (Nutrition)
Houaphan	Kuane	3,809	24,525	66	30	2,489	1,231	1,712	2,279	49%	69%
	Huameug	5,292	32,234	76	34	2,766	933	2,071	2,533	34%	75%
	Sone	2,474	15,755	34	29	2,619	1,214	1,948	2,398	46%	74%
	Xamtay	6,022	36,696	90	32	2,993	1,156	2,122	2,741	39%	71%
Xiengkhouang	Kham	8,470	47,256	90	30	3,160	1,056	2,191	2,893	33%	69%
	Nonghed	6,033	37,406	106	34	1,923	841	1,459	1,761	44%	76%
Oudomxay	La	3,502	16,506	44	32	3,071	1,038	1,861	2,812	34%	61%
	Namor	6,870	37,322	62	34	4,294	1,244	2,369	3,932	29%	55%
Phongsaly	Khua	5,293	25,557	94	33	2,125	1,347	1,841	1,946	63%	87%
	May	4,678	26,145	88	34	2,369	1,172	1,599	2,169	49%	67%
	Samphan	4,375	22,981	68	34	2,932	1,253	2,053	2,685	43%	70%
	Bountai	4,723	23,402	63	31	2,553	921	1,644	2,338	36%	64%
Total		**61,541**	**345,785**	**881**	**387**	**33,294**	**13,406**	**22,870**	**30,486**	**40%**	**69%**

6.2   QUESTIONNAIRE

The questionnaire includes all the questions that were asked during the baseline and midline surveys to compare the data over the course of the project, and it also includes extra questions. The questionnaire is divided into several questions that include a wide range of topics. The questions relating to household subjects are mainly asked to the head of the household and the questions

relating to children and pregnancy are generally asked to the mother accompanying the head of the households. For this study, no anthropometric measurements were taken; questions about underweight, stunting, and wasting are not included in this study and may be the subject of an additional study in this report.

6.3 TRAINING

Four days training including one day training of supervisors was conducted one week before fieldwork. Feedback was given to the team at the end of the day after each mock practice.

During the training each question in the questionnaire was explained to ensure trainees understand the link between each question, the rationale behind the questions as well as discussing any possible confusing responses that they may encounter in the field. The training agenda that was conducted in both Vientiane capital and Muang Khua venues is available in the annex of this report. The enumerators team consisting of 1 LCG supervisors and 4 to 5 district officers of each district.

- AFN district M&E staff
- DAFO staff
- WFP-AFN provincial and district staff
- DoH staff
- LWU staff
- LCG Supervisors

In total, 38 enumerators of the districts of Xiengkhouang and Houaphan provinces were trained in Vientiane capital in October 2022.

Another 38 enumerators were trained to complete fieldwork in the districts of Oudomxay and Phongsaly provinces. This training was conducted in Khua district in November 2022.

Figure 1: Training participants in Khua District

6.4 DATA COLLECTION

An electronic data input method was implemented. The questionnaires were uploaded electronically into a mobile data collection application - ODK - for the field teams. The ODK Collect app is internationally recognized. The app is constantly updated by a large active developer's community. ODK supports data of all types including image, videos and GPS code.

The responses to the questionnaires were entered electronically in the field which are uploaded directly to the cloud where Internet is available, or when the Internet becomes available in town at the end of the fieldwork. This data is accessible to the data manager. On a daily basis and based in the Vientiane office, the quality control manager controlled all received data aggregated by using appropriated queries. The quality control manager was able to control inconsistencies and errors in the data by using predefined queries. When errors are identified the quality manager in liaison with the field team supervisors resolved the data issues. Finally, a cleaned, and consolidated dataset was created a few weeks after the completion of data collection.
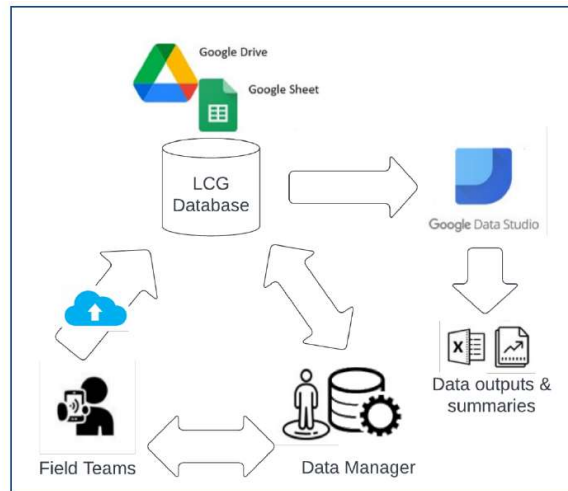
Figure 2: Field data workflow

Figure 3: Interview of Household

6.1   STATISTICAL ANALYSIS OF THE DATA

In order to discern patterns and trends of the data collected, statistical analysis is a method for removing bias from evaluating data by employing numerical analysis. This technique is useful for collecting interpretations of research, developing statistical models and studies. This study interprets the collected data using descriptive statistical analysis. The result is presented by summarizing data to present them in the form of charts, graphs, and tables. Rather than drawing conclusions, it simply makes the data easy to read and understand. Mean or average mean is the main methods of statistical analysis used in this report. Mean is calculated by summing the numbers in the data set together and then dividing it by the number of data points.

Households were interviewed proportionally for each district selected for the survey. At the population level, a statistical analysis was made of the proportion of children included in the study, given that young children are a key component of the project.

The table below shows the homogeneity of the data for each surveyed district. Children under 2 years of age are homogeneously distributed throughout the districts with a maximum variation of 4 percent and 3 percent for children under 5 years old.

The second table shows the distribution of household members for each province studied. Each province shown considers the aggregation of the target districts only. The total number of households interviewed was 1,500, half of which were from AFN villages and the other half from control villages. 8,622 people is the total number of household members included in this study, 12% of whom are under 5 years old and 6% of whom are under 2 years old. The share of pregnant women is 2%. According to the homogeneous balance of the distribution of households and young children in the sample, a complex calculation of weights did not seem to be relevant to apply in this study.

Table 5 : Household composition statistical data by survey district

Province	CU2	CU5	HH
Houaphan			
Huameuang District	11%	9%	8%
Kuane District	5%	6%	8%
Sone District	9%	9%	8%
Xamtay District	6%	8%	8%
Oudomxay			
La District	4%	6%	8%
Namor District	13%	11%	8%
Xiengkhouang			
Kham District	7%	7%	8%
Nonghed District	8%	8%	8%
Phongsaly			
Bountai District	9%	7%	8%
Khua District	8%	8%	9%
May District	6%	8%	8%
Samphanh District	15%	13%	8%
Total	**100%**	**100%**	**100%**

Table 6: Household member composition statistical data by province

Provinces	HH	HH Member	CU5		CU2		Pregnant Women	
			#	%	#	%	#	%
Houaphan	500	2,877	316	11%	136	7%	46	2%
Oudomxay	250	1,434	167	12%	77	5%	18	1%
Phongsaly	500	2,811	375	13%	162	6%	55	2%
Xiengkhouang	250	1,500	142	9%	57	6%	19	1%
Total	**1,500**	**8,622**	**1,000**	**12%**	**432**	**6%**	**138**	**2%**

6.1   LIMITATIONS OF THE SURVEY

Even through the straightforwardness of calculation and its benefits for descriptive statistical analysis, some summary tables calculated with average, and means are not sufficient to foresee conclusion. In certain cases, scores calculated with descriptive analysis are not a sufficient indicator and should be coupled with quantitative information and crosschecked with the local staff on the ground.

7   ENDLINE SURVEY RESULT

7.1   HOUSEHOLD CHARACTERISTICS

7.1.1 DEMOGRAPHIC

- Household Size

In 2022, the average household size is 5.8 members per household, with a slight increase for Xiengkhouang, which has an average of six members. In comparison with the baseline study and the mid-term study, a significant decrease is to be reported from 7.2 in 2016, to 6.8 in 2020 and 5.8 in 2022.

Table 7: Average household size by province

Province	Baseline	Midline	Endline
Houaphan	7.7	7.0	5.8
Oudomxay	6.7	6.2	5.7
Phongsaly	7.2	6.5	5.6
Xiengkhouang	6.9	7.2	6.0
Total average	**7.2**	**6.8**	**5.8**

In terms of distribution by ethnic group, the Akha and Hmong ethnic groups are above the total average with 6.1 and 6.9 members per household, respectively.

Table 8: Average household size by ethnicity

Ethnic group	Midline	Endline
Akha	7.6	6.1
Hmong	8.0	6.9
Khmu	6.3	5.6
Lao	6.8	5.4
Phounoiy	5.4	5.1
Tai	6.3	5.4
Total average	**6.8**	**5.8**

- Gender

The gender balance is homogeneous with a slightly higher representation of men than women, which is only 1.6%. The share of women as head of household is 3.3%. It should be noted that 44.1% of the respondents to the study are women. 50.3% are heads of household and 33.1% are spouses of heads of household. The large proportion of women who responded to the questionnaire is noteworthy given the well-known context of Laos where men are more likely to respond to interviews.

Table 9: Household member gender repartition by province

Household members	Gender		
Province	Male	Female	Female as Family Head
Houaphan	51.0%	49.0%	2.0%
Oudomxay	51.3%	48.7%	3.3%
Phongsaly	50.2%	49.8%	4.3%
Xiengkhouang	51.1%	48.9%	4.1%
Total	**50.8%**	**49.2%**	3.3%

Table 10: Respondent by gender and position in the family

Respondent	Gender			
Province	Male	Female	As Family Head	As Family spouse
Houaphan	58.2%	41.8%	51.6%	33.8%
Oudomxay	64.8%	35.2%	58.4%	26.4%
Phongsaly	52.6%	47.4%	47.6%	34.4%
Xiengkhouang	48.8%	51.2%	45.2%	36.0%
Total	**55.9%**	**44.1%**	**50.3%**	**33.1%**

- Age Group

The dependency ratio gives a good indication of the distribution of children under 15 years old and elderly people over 65 years old who are considered to be family members requiring support from adults whose ages are considered to be the labour force (15-64 years). The average dependency ratio is 53.9% in all 4 provinces. Phongsaly with a dependency ratio of 62.7% is the province with the highest number of children per household.

Table 11: Household members dependency age group by province

Age group	Dependency age			
Province	<15	15-64	>65	Dependency Ratio
Houaphan	30.4%	63.9%	5.8%	56.5%
Oudomxay	28.2%	68.8%	3.1%	45.4%
Phongsaly	33.9%	61.2%	4.9%	62.7%
Xiengkhouang	28.7%	66.2%	5.1%	51.1%
Total	**30.9%**	**64.2%**	**4.9%**	**53.9%**

Table 12: CU5 Household members distribution

Household Members	Under 5 Age Distribution			
Provinces	<6 months	6-23.9 months	24-59.9 months	Total
Houaphan	9.8%	33.2%	57.0%	100%
Oudomxay	10.8%	35.3%	53.9%	100%
Phongsaly	8.5%	34.7%	56.8%	100%
Xiengkhouang	4.9%	35.2%	59.9%	100%
Total	**8.8%**	**34.4%**	**56.8%**	**100%**

- Ethnicity

All heads of households interviewed reported their affiliation to an ethnic group. In this survey we have counted a total of 15 ethnic groups. In order to simplify the statistical rendering of this study we have grouped these ethnic groups into 6 major groups, the grouping is shown in the following table. With a total of 39.5%, the Khmu ethnic group is the most represented, with a peak in Oudomxay province. We observed that the Akha and Phounoiy ethnic groups are largely represented in the province of Phongsaly.

Table 13: Head of family ethnicity by province

	Province				
Ethnicity	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Khmu	**17.6%**	**79.2%**	**56.4%**	**10.0%**	**39.5%**
Khmu	17.6%	79.2%	56.4%	10.0%	39.5%
Lao	**36.6%**	**6.0%**	**1.2%**	**50.8%**	**22.1%**
Lao	36.6%	6.0%	1.2%	42.8%	20.7%
Phong	0.0%	0.0%	0.0%	8.0%	1.3%
Hmong	**24.4%**	**2.4%**	**2.6%**	**38.0%**	**15.7%**
Hmong	24.4%	2.4%	2.6%	38.0%	15.7%
Tai	**21.4%**	**12.0%**	**4.8%**	**1.2%**	**10.9%**
Thai Dam	5.0%	8.8%	4.2%	0.0%	4.5%
Thai Daeng	11.0%	0.4%	0.4%	0.4%	3.9%
Tai	5.4%	0.0%	0.2%	0.8%	2.0%
Yang	0.0%	2.0%	0.0%	0.0%	0.3%
Lue	0.0%	0.8%	0.0%	0.0%	0.1%
Akha	**0.0%**	**0.4%**	**22.4%**	**0.0%**	**7.5%**
Akha	0.0%	0.4%	21.0%	0.0%	7.1%
Mouchi	0.0%	0.0%	0.8%	0.0%	0.3%
Pala	0.0%	0.0%	0.6%	0.0%	0.2%
Phounoiy	**0.0%**	**0.0%**	**12.6%**	**0.0%**	**4.2%**
Phounoiy	0.0%	0.0%	6.8%	0.0%	2.3%
Lao Saeng	0.0%	0.0%	4.2%	0.0%	1.4%
Singsily	0.0%	0.0%	1.6%	0.0%	0.5%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

The comparative table below shows the distribution of respondents by ethnic group over three field survey campaigns. During the baseline study phase, the Hmong ethnic group had a larger part than in the other studies.

Table 14: Ethnicity distribution by survey period

Ethnic Group	# of HHs interviewed	Baseline	Midline	Endline
Khmu	593	20%	48.9%	39.5%
Lao	331	14%	3.9%	22.1%
Hmong	236	36%	21.3%	15.7%
Akha	113	17%	8.3%	7.5%
Phounoiy	63	4%	2.5%	4.2%
Tai	164	3%	15.1%	10.9%
Total	**1,500**	**100%**	**100%**	**100%**

- Education

The level of education completed by households does not differ significantly between the AFN villages and the control villages. In general, the proportion of women who have not studied is 10% higher than that of men. About 45% of the population completed primary school, 30% secondary school, and about 5% pursued higher education.

Respectively 50% and 26% of the Akha and Hmong women have not studied. The part of Lao women not having studied is the lowest, which is 6 %. The current situation of children enrolled in school is gender balanced. The proportion of children currently continuing their education is 1%.

Table 15: Household members highest education level completed by gender

Household Members	Village type			
	AFN		Control	
Education Level	Male	Female	Male	Female
Didn't study	7.2%	17.3%	5.6%	15.8%
Studied	92.8%	82.7%	94.4%	84.2%
Pre-school	0.3%	1.4%	0.3%	0.8%
Primary School	45.3%	53.7%	41.7%	51.6%
Lower Secondary School	29.3%	26.1%	29.1%	26.8%
High School	18.8%	14.5%	21.4%	13.2%
College/ University	6.3%	4.2%	7.5%	7.6%
Total	**100%**	**100%**	**100%**	**100%**

Table 16: Household members highest education level completed by ethnicity and gender

Household Members	Ethnic Group											
	Akha		Hmong		Khmu		Lao		Phounoiy		Tai	
Education level	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Didn't study	**18%**	**50%**	**7%**	**19%**	**6%**	**16%**	**2%**	**6%**	**12%**	**26%**	**7%**	**13%**
Studied	**82%**	**50%**	**93%**	**81%**	**94%**	**84%**	**98%**	**94%**	**88%**	**74%**	**93%**	**87%**
Pre-school	0%	0%	0%	2%	0%	1%	1%	2%	0%	0%	0%	1%
Primary School	51%	60%	34%	38%	47%	58%	37%	48%	67%	67%	46%	55%
Lower Secondary School	31%	36%	30%	40%	31%	26%	28%	21%	17%	21%	28%	21%
High School	17%	2%	28%	17%	17%	12%	24%	18%	13%	9%	17%	12%
College/ University	2%	2%	8%	3%	5%	3%	10%	10%	3%	3%	9%	11%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 17 : Household members currently enrolled at school by province

Household Members	Village type			
	AFN		Control	
Education level	Male	Female	Male	Female
Currently enrolled				
Pre-school	15.6%	11.8%	15.2%	16.8%
Primary School	59.3%	44.0%	45.9%	39.5%
Lower Secondary School	20.7%	27.5%	27.4%	23.7%
High School	4.4%	15.3%	10.8%	17.1%
College/ University	0.0%	1.4%	0.7%	2.8%
Total	**100%**	**100%**	**100%**	**100%**

7.1.2 HOUSEHOLD STRUCTURE CHARACTERISTICS

- Access to electricity

The level of access to electricity in all villages, whether AFN or control, is similar and is very high, with only 2.4% of the population not having access to electricity. It should be noted that the percentage of the Hmong and Akha ethnic group that do not have access to electricity is more significant (7.7%)

Table 18: Access to electricity by province

Province	Village type			
	AFN		Control	
	Have electricity	No have electricity	Have electricity	No have electricity
Houaphan	99.8%	0.2%	98.8%	1.2%
Oudomxay	97.0%	3.0%	100%	0.0%
Phongsaly	95.2%	4.8%	97.1%	2.9%
Xiengkhouang	98.2%	1.8%	95.5%	4.5%
Total	**97.6%**	**2.4%**	**97.8%**	**2.2%**

Table 19: Access to electricity by ethnicity

Ethnic Group	Village type			
	AFN		Control	
	Have electricity	No have electricity	Have electricity	No have electricity
Phounoiy	88.9%	11.1%	66.7%	33.3%
Akha	94.8%	5.2%	100.0%	0.0%
Hmong	96.2%	3.8%	92.3%	7.7%
Khmu	98.2%	1.8%	100%	0.0%
Lao	98.9%	1.1%	100%	0.0%
Tai	100%	0%	100%	0.0%
Total	**97.6%**	**2.4%**	**97.8%**	**2.2%**

- Main source of energy

Currently 76 % of Household using electricity as the main source of energy for lighting. Villages in Oudomxay preferably use candle on the night to save electricity. 29 % of the household in Oudomxay provinces reported to use candles rather that electricity from the public network. All the villages interviewed are connected to network.

Table 20: Main sources of energy used by province

Source of Energy	Province				
	Xiengkhouang	Phongsaly	Oudomxay	Houaphan	Total
Electricity from public network	80%	85%	50%	86%	76%
Candle	8%	1%	29%	5%	10%
Electricity from generator	0%	0%	0%	3%	1%
From battery	0%	1%	0%	3%	1%
Small Hydropower	0%	4%	1%	0%	1%
Kerosene lamp	2%	1%	15%	0%	4%
Solar panel	2%	6%	4%	1%	3%
Other (example….)	8%	2%	1%	3%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

- Home garden

The following table presents significant information on the distribution of home gardens in the household. A home garden (or kitchen garden) is a small plot, around 15-25 square meters, of land usually found near the household house and at the nearest point of a water source. The home garden supports household nutrition purposes and not necessarily commercial activity although especially chicken and ducks are also sold for income generation.

There is a considerable difference between AFN and control villages, where 95% of households in an AFN village have a home garden compared to 77% in control villages. Oudomxay and Xiengkhouang provinces have a higher number of home gardens than the total average.

Table 21: Household with home garden by ethnicity

Ethnicity Group	Village type			
	AFN		Control	
	Have Home Garden	Don't have home garden	Have Home Garden	Don't have home garden
Phounoiy	92.9%	7.1%	61.9%	38.1%
Akha	92.7%	7.3%	90.3%	9.7%
Hmong	94.9%	5.1%	63.3%	36.7%
Khmu	92.9%	7.1%	73.4%	26.6%
Lao	97.0%	3.0%	79.1%	20.9%
Tai	97.8%	2.2%	96.0%	4.0%
Total	**94.6%**	**5.4%**	**77.2%**	**22.8%**

Table 22: Household with home garden by province

Province	Village type			
	AFN		Control	
	Have Home Garden	Don't have home garden	Have Home Garden	Don't have home garden
Houaphan	93.3%	6.7%	82.7%	17.3%
Oudomxay	98.4%	1.6%	81.5%	18.5%
Phongsaly	93.3%	6.7%	77.0%	23.0%
Xiengkhouang	96.0%	4.0%	62.1%	37.9%
Total	**94.6%**	**5.4%**	**77.2%**	**22.8%**

Total Households in the Project Area with Home Garden: 33,924 x 95 % = 31,629 HHs

The bar chart below shows the most popular crops grown in AFN and Control vegetable gardens, with the percentage of each type of crop relative to the total number of crops grown in the entire interviewed households. The AFN villages has 88% of the crops listed in the table, with the remaining 12% being grown in the control villages. The most popular crops in the AFN vegetable gardens are herbs (mint, basil, etc…), mustard greens, chilies, banana, and papaya. In the control villages, the crops grown are less diverse, with herbs, mustard greens, chilies, banana, and papaya making up only 7% of the total crops grown.

Table 23: Repartition of home garden cultures between AFN and control villages
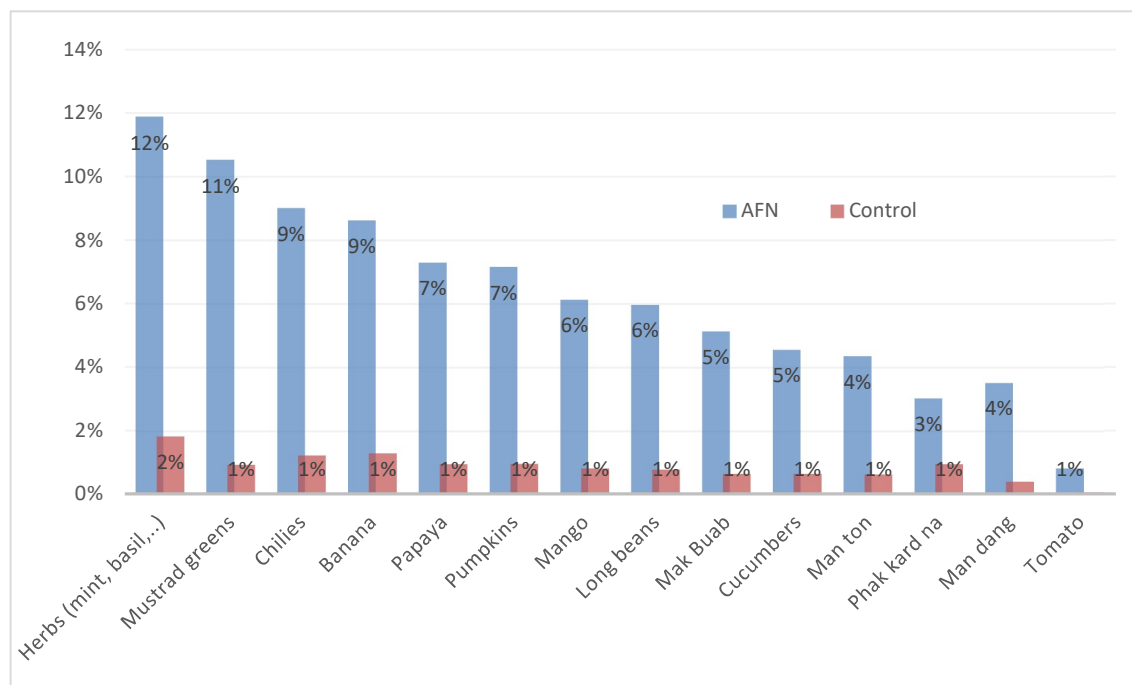
93% of households in the AFN villages received a grant. There are two types of project grants: the home Garden Grant (GG) and the Agricultural Production Group Grant (APG). In the sample are 50% of households received at least one of the two grants and 43% received either one or the other. Houaphan province issued fewer grants than the overall average.

Table 24 : Type of investment by province in AFN village

Type of investment received	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
AP Grant	65.5%	73.8%	71.0%	70.6%	69.6%
Garden Grant	71.4%	80.2%	71.0%	77.8%	73.8%
AP & GG	44.0%	55.6%	52.0%	52.4%	50.0%
AP or GG*	48.8%	42.9%	38.1%	43.7%	43.4%
No Grant	7.1%	1.6%	9.9%	4.0%	6.6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

* Exclusive or

The green frame below provides information on the percentage calculation of households in the **Project Area** that have received either an **APG Grant** or a **Garden Grant** based on assumption obtain by observation and data collected during the endline survey. The data shows that 41.8% of households in the **Project Area** have received an **APG Grant** while 69.0% of households have received a **Garden Grant**. Out of the households that received a **Garden Grant**, 50% also received an **APG Grant,** resulting in 11,485 households with an overlap of grants. Additionally, the total number of households that received at least one grant is 27,145, which is calculated as 70% of the households that received an **APG Grant** also received a **Garden Grant**.

> **Percentage of Households in the Project Area with APG Grant: 13,915/33,294 = 41.8 %**
>
> **Percentage of Household in Project Area with Garden Grant: 22,970/33,294 = 69.0 %**
>
> **Total households received at least one Grant = 30%x 13,915 + 22,970 = 27,145 HHs**

- Household assets

The assets that households own the most are scooters, smartphones, and televisions. The distribution of assets between AFN and control villages is roughly similar, with only one percent of households in AFN villages owning a water pump compared to four percent in control villages. The table also indicates a significant increase in asset ownership between the baseline and endline surveys, with the percentage of households owning a refrigerator rising from 14% to 47.1%, television ownership increasing from 44% to 66.3%, and fan ownership increasing from 22% to 46%. These increases in household asset ownership are indicative of an improvement in living conditions in the study area.

Table 25: Household assets by ethnicity

Asset	Repartition Between		All Villages						Total Endline	Total Baseline
	AFN	Control	Akha	Hmong	Khmu	Lao	Phounoiy	Tai		
A Radio	6.3%	5.8%	2.7%	3.8%	7.8%	6.9%	3.2%	4.9%	**6.1%**	**11%**
A Refrigerator	39.6%	54.8%	26.5%	33.9%	39.6%	71.0%	41.3%	61.6%	**47.1%**	**14%**
A Television	63.2%	69.5%	35.4%	33.9%	72.2%	85.8%	54.0%	78.7%	**66.3%**	**44%**
Air conditioner	0.4%	0.3%	0.9%	0.0%	0.2%	0.3%	1.6%	0.6%	**0.3%**	**0%**
Animal drawn cart	1.6%	0.5%	0.0%	0.8%	0.2%	1.8%	4.8%	2.4%	**1.1%**	**1%**
Bicycle	12.0%	8.6%	3.5%	9.3%	7.9%	12.7%	3.2%	23.2%	**10.3%**	**7%**
Boat with motor	1.6%	0.8%	0.9%	1.3%	1.3%	0.9%	0.0%	1.8%	**1.2%**	**1%**
Camera	0.0%	0.3%	0.0%	0.0%	0.0%	0.3%	0.0%	0.6%	**0.1%**	**1%**
Car/Truck	8.3%	11.2%	5.3%	15.3%	6.6%	14.8%	3.2%	8.5%	**9.7%**	**6%**
CD/DVD Player	4.2%	2.3%	0.0%	3.4%	2.4%	6.3%	0.0%	3.7%	**3.3%**	**24%**
Computer	3.2%	3.1%	1.8%	1.7%	2.2%	6.0%	1.6%	4.3%	**3.1%**	**3%**
Fan	42.1%	50.0%	15.9%	28.4%	41.0%	66.5%	42.9%	70.1%	**46.0%**	**22%**
Non-Mobile Phone	41.5%	38.3%	22.1%	45.3%	37.8%	48.9%	36.5%	35.4%	**39.9%**	**28%**
Mobile Phone	84.8%	81.3%	75.2%	82.6%	81.1%	88.2%	73.0%	89.6%	**83.1%**	**74%**
Motorcycle/Scooter	90.3%	89.9%	71.7%	91.1%	91.9%	94.9%	74.6%	91.5%	**90.1%**	**82%**
Small rice milling machine	44.7%	39.5%	43.4%	39.4%	27.3%	64.7%	17.5%	62.8%	**42.1%**	**NA**
Sofa /wooden settee	13.9%	16.0%	12.4%	10.6%	12.8%	16.3%	19.0%	26.2%	**14.9%**	**6%**
Rototiller	35.6%	38.7%	15.9%	34.7%	18.2%	60.7%	60.3%	67.1%	**37.1%**	**22%**
Watch	9.9%	9.0%	6.2%	8.9%	8.3%	13.0%	6.3%	11.0%	**9.5%**	**14%**
Water pump	1.5%	4.3%	0.9%	1.3%	0.8%	6.3%	3.2%	6.7%	**2.9%**	**2%**
Other	10.6%	8.9%	10.6%	16.1%	5.7%	12.7%	9.5%	8.5%	**9.7%**	**-**

7.1.3 COMPARATIVE ANALYSIS

Between the midline and the endline surveys, the share of home garden grants increased by 19%, the share of APG grants decreased by 14%, and the share of households that received both grants increased by 50% compared to 45% during the midline study. The share of households that received either one or the other and not cumulatively is 43%. This brings the share of households that received at least one grant to 93%. This shows that during the last few years of the project, particular attention was paid to the home garden grants.

Table 26: Type of Investment by survey period

Type of investment received	Midline	Endline
AP Grant	84%	70%
Garden Grant	55%	74%
AP & GG	45%	50%
AP or GG	48%	43%
No Grant	7%	7%

7.2   STUNTING

In nutrition study, stunting refers to a condition where a child has low height-for-age compared to a reference population, indicating chronic malnutrition and/or inadequate nutrient intake.

Underweight, refers to a condition where a child has low weight-for-age compared to a reference population, indicating a composite measure of both acute and chronic malnutrition and/or inadequate nutrient intake.

The endline survey conducted during the project period did not include anthropometric measurements as these are not core indicators for GAFSP, IFAD and WFP. However, the 2017 Lao Social Indicator Survey (LSIS), which is a combination of the demographic and health survey and multi-indicator cluster survey, did carry out anthropometric measurements and showed improvements in key indicators compared to the previous survey conducted in 2011. It is challenging to attribute these improvements solely to the project as it began operating in 2016, after the 2017 LSIS was conducted. Unfortunately, there have been no subsequent surveys, including the planned LSIS III in 2022, due to the COVID-19 situation in the country.

Despite the lack of a national anthropometric survey during the last year project period, available data from previous reports indicate a reduction in stunting by 12.6% and underweight by 8.2% between 2011 and 2021. From the period of the project until 2021, stunting decreased by 2.1% and underweight by 5.5%. It is important to exercise caution in interpreting these changes as they may be influenced by external factors beyond the scope of the project. Nonetheless, these data provide valuable insights into the project's potential impact on improving nutritional outcomes in the target population.
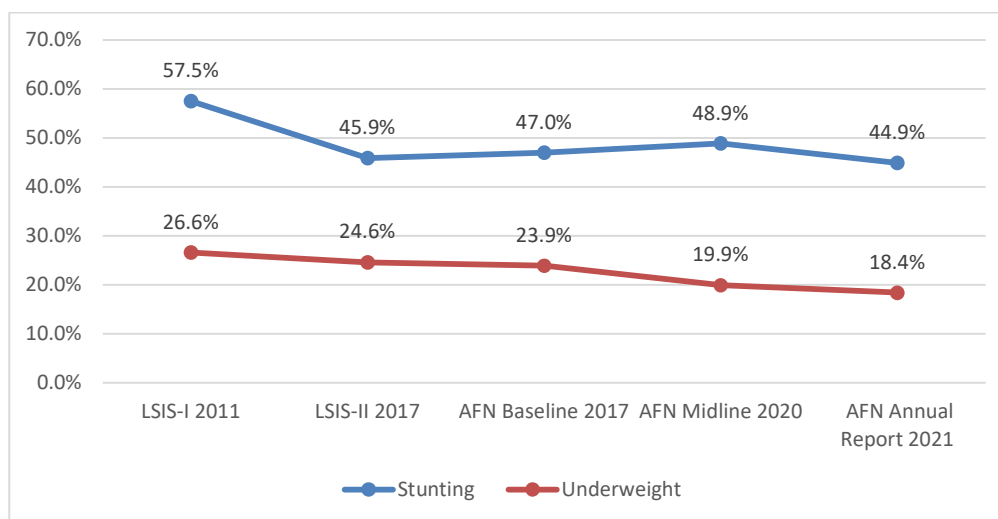
Figure 4: Overall stunting/underweight data for AFN districts

7.3 INCOME, POVERTY INDICATOR, 30 % INCREASE IN INCOME

7.3.1 MAF Indicator

The year 2022 has been marked by an unstable and unpredictable economic situation. Globalized external events such as the COVID-19 pandemic, the war in Ukraine and the crisis of energy resources have had a direct and considerable impact on the cost of living of households and on the results of financial indicators. The significant inflation of the US Dollar and the wave of depreciation of the local currency are factors that can make the reading of financial indicators ambivalent. However, it is important to note that from an accounting and household perception, a clear improvement in the income of beneficiaries in the project implementation area is reported. LAK 31.42 million is the average total income. Houaphan and Phongsaly provinces generate less income that the total average. Similarly, this is also the case for Akha, Khmu and Tai communities.

Table 27: Sources of income by province

Average	Province				
Income source	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
1 Crops	2.55 M₭	8.06 M₭	5.83 M₭	19.95 M₭	6.66 M₭
2/3 Livestock	5.96 M₭	5.0 M₭	1.74 M₭	8.01 M₭	4.77 M₭
4 Sale of timber/poles, non-timber forest products	1.07 M₭	1.10 M₭	2.11 M₭	1.08 M₭	1.43 M₭
5 Small businesses	2.75 M₭	2.04 M₭	.67 M₭	3.86 M₭	2.12 M₭
6 Casual labour	1.52 M₭	5.30 M₭	.94 M₭	1.77 M₭	2.0 M₭
7 full-time or part-time employment	5.34 M₭	4.87 M₭	3.0 M₭	2.01 M₭	3.93 M₭
8 Interest	.36 M₭	.36 M₭	.04 M₭	.09 M₭	.21 M₭
9 Remittance	.62 M₭	1.23 M₭	.39 M₭	1.24 M₭	.75 M₭
10 Pension	.44 M₭	.80 M₭	.34 M₭	.56 M₭	.49 M₭
11 Cash Assistance	.68 M₭	.65 M₭	.52 M₭	1.11 M₭	.69 M₭
Average of total income	**25.81 M₭**	**42.93 M₭**	**27.20 M₭**	**39.59 M₭**	**31.42 M₭**

Table 28: Sources of income by ethnicity

Average	Ethnic group						
Income source	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
1 Crops	5.06 M₭	6.88 M₭	5.88 M₭	11 M₭	11 M₭	4.45 M₭	6.66 M₭
2/3 Livestock	.72 M₭	8.85 M₭	3.23 M₭	6.90 M₭	.86 M₭	3.47 M₭	4.77 M₭
4 Sale of timber/poles, non-timber forest products	2.64 M₭	.89 M₭	1.83 M₭	.95 M₭	1.18 M₭	.95 M₭	1.43 M₭
5 Small businesses	.09 M₭	2.35 M₭	1.23 M₭	4.27 M₭	.30 M₭	2.79 M₭	2.12 M₭
6 Casual labour	.32 M₭	1.99 M₭	2.10 M₭	1.96 M₭	1.04 M₭	3.25 M₭	2.0 M₭
7 full-time or part-time employment	1.43 M₭	3.48 M₭	3.09 M₭	6.20 M₭	1.57 M₭	5.68 M₭	3.93 M₭
8 Interest	.0 M₭	.03 M₭	.06 M₭	.78 M₭	.04 M₭	.08 M₭	.21 M₭
9 Remittance	.43 M₭	.69 M₭	.67 M₭	1.15 M₭	.08 M₭	.81 M₭	.75 M₭
10 Pension	.15 M₭	.27 M₭	.41 M₭	.91 M₭	.19 M₭	.56 M₭	.49 M₭
11 Cash Assistance	.53 M₭	.60 M₭	.45 M₭	1.34 M₭	.42 M₭	.61 M₭	.69 M₭
Average of Total Income	**24.21 M₭**	**32.26 M₭**	**29.94 M₭**	**37.99 M₭**	**36.37 M₭**	**25.37 M₭**	**31.42 M₭**

In order to compare the standard of living of households in 2022 with the results of previous studies and in view of the events mentioned above, we recalculated and re-estimated the poverty line at 326 USD (270 USD in 2017). Over the course of the project the inflation of the dollar has reached 20.7%. Monthly average was considered to calculate the 2022 inflation rate. The conversion rate LAK-USD is also calculated using the previous 12 months mean resulting to LAK 12,089 per 1 USD.

With an average of 493.65 USD per capita, the percentage of the beneficiary population of the project below the poverty level is 46.4%. This is an improvement of 6 % percent over the midline survey. Houaphan is the province with the highest rate of HHs under the poverty line (57.5%).

Nevertheless, the annual dollar and LAK inflation graphs indicate that 2021 and 2022 experienced exceptional inflation rates that were not anticipated during the 2016 project design. This resulted in the prior predictions and indicators being developed based on the assumption of a regular 1.5 to 2% annual inflation. In light of this, we have used a typical inflation trajectory to demonstrate the relationship between poverty and inflation, which does not consider the current crises. The poverty line in 2022, akin to that of 2020, would have been USD 283. As a result, the percentage of households living below the poverty line would be 30.2%, considerably lower than the 46.4% calculated above.
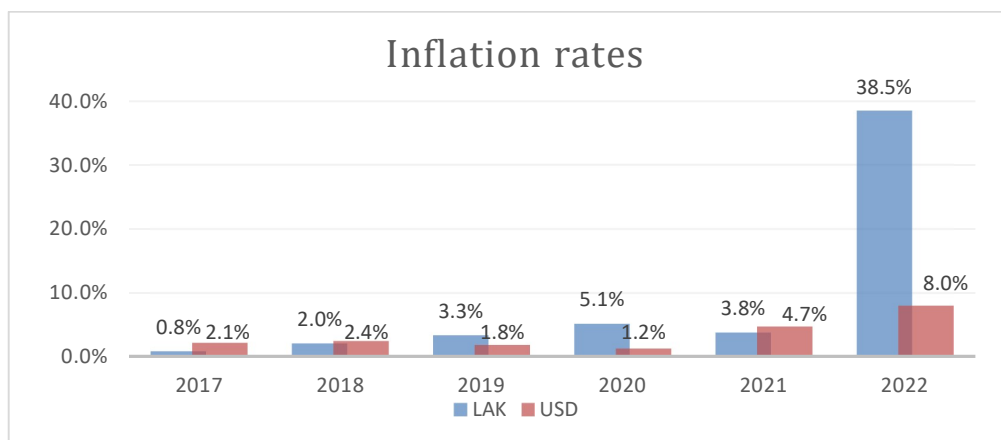
Figure 5: Annual inflation rates of the USD and LAK currencies

Table 29: Income per capita in AFN villages by province in last 12 months

Province	Average Yearly HH Income (LAK)	Average Income per capita	Income per capita in USD	% of HH under Poverty line 2020 (283USD)	% of HH under Poverty line (326USD)
Houaphan	24,655,464	4,560,748	377.26	36.5%	57.5%
Oudomxay	44,058,183	7,086,412	586.19	12.7%	33.3%
Phongsaly	30,146,327	5,517,353	456.39	35.7%	50.4%
Xiengkhouang	46,721,675	8,563,492	708.37	23.8%	29.3%
Total	**33,397,240**	**5,967,685**	**493.65**	**30.2%**	**46.4%**

In 2022, the part of on farm income over the total household income is 59.2%, on which 57.5% of households increased their on-farm income by over 30% compared to the baseline survey. Xiengkhouang and Oudomxay provinces have better results on this income indicator, respectively 80.2 % and 72.2% of the beneficiaries HHs increased their on-farm incomes by at least 30%.

Table 30 : Income per HH by farm source in AFN villages

Province	% of HH Increase Income by 30% from Baseline	Off Farm	On Farm	% On Farm
Houaphan	45.6%	11.36 M₭	13.30 M₭	49.5%
Oudomxay	80.2%	13.25 M₭	30.81 M₭	75.1%
Phongsaly	50.8%	10.23 M₭	19.92 M₭	58.4%
Xiengkhouang	72.2%	15.26 M₭	31.46 M₭	64.2%
Total	**57.5%**	**11.95 M₭**	**21.45 M₭**	**59.2%**

> **Total Households in the Project Area with income over the poverty line:**
>
> **33,294 x 69.8% = 23,239 HHs (with projected "normal" inflation rates)**
>
> **33,294 x 53.6 % = 17,846 HHs (with actual inflation rates)**

> **Total Household in Project Area with income increase by 30%**
>
> **from baseline: 33,294 X 57.5 % = 19,506 HHs**

On average, income per capita is reported to be higher in AFN villages than control villages. Even median, 1st and 4th quartile show higher figures. For the ethnic groups, Akha and Tai have average incomes lower than other ethnic groups. We also note that incomes of distinct ethnic groups between AFN and control villages are much less in control villages for Akha and Hmong and inversely higher for Lao ethnics.

Table 31: Average, quartile, and median Income per capita by province and village type

	Village type							
	AFN				Control			
Province	Average	1st quartile	Median	4th quartile	Average	1st quartile	Median	4th quartile
Houaphan	4.56 MₖK	1.66 MₖK	3.12 MₖK	5.60 MₖK	5.38 MₖK	1.22 MₖK	3.51 MₖK	6.68 MₖK
Oudomxay	7.09 MₖK	3.36 MₖK	5.44 MₖK	8.39 MₖK	7.70 MₖK	2.73 MₖK	5.28 MₖK	9.72 MₖK
Phongsaly	5.52 MₖK	1.88 MₖK	3.82 MₖK	7.30 MₖK	4.33 MₖK	1.25 MₖK	2.74 MₖK	6.20 MₖK
Xiengkhouang	8.56 MₖK	2.84 MₖK	6.91 MₖK	11.65 MₖK	6.27 MₖK	1.34 MₖK	3.89 MₖK	7.47 MₖK
Total	**5.97 MₖK**	**2.13 MₖK**	**4.32 MₖK**	**7.74 MₖK**	**5.57 MₖK**	**1.40 MₖK**	**3.54 MₖK**	**7.31 MₖK**

Table 32 : Average, quartile, and median Income per capita by ethnicity and village type

	Village type							
	AFN				Control			
Province	Average	1st quartile	Median	4th quartile	Average	1st quartile	Median	4th quartile
Akha	3.57 MₖK	1.15 MₖK	1.88 MₖK	4.90 MₖK	4.12 MₖK	1.20 MₖK	2.39 MₖK	6.34 MₖK
Hmong	6.82 MₖK	2.13 MₖK	5.11 MₖK	9.66 MₖK	3.21 MₖK	.60 MₖK	1.45 MₖK	4.43 MₖK
Khmu	5.81 MₖK	2.41 MₖK	4.33 MₖK	7.48 MₖK	4.90 MₖK	1.60 MₖK	3.52 MₖK	6.63 MₖK
Lao	6.65 MₖK	2.37 MₖK	4.75 MₖK	8.39 MₖK	7.99 MₖK	2.09 MₖK	5.04 MₖK	10.48 MₖK
Phounoiy	10.03 MₖK	6.0 MₖK	7.96 MₖK	14.04 MₖK	1.80 MₖK	.54 MₖK	1.33 MₖK	1.90 MₖK
Tai	3.33 MₖK	1.26 MₖK	2.42 MₖK	3.94 MₖK	7.26 MₖK	1.98 MₖK	4.87 MₖK	9.25 MₖK
Total	**5.97 MₖK**	**2.13 MₖK**	**4.32 MₖK**	**7.74 MₖK**	**5.57 MₖK**	**1.40 MₖK**	**3.54 MₖK**	**7.31 MₖK**

In quantitative studies the methods of collecting financial data are always very complicated and often random, as some households may not want to communicate their income for fear of transparency to local authorities. In addition, some calculations may be approximate and may not represent certain realities. In order to cross-check the information with the calculated income data, we asked each household to give us a self-assessment of their income generation between the beginning and the end of the project, so that we could use this as a basis for comparison.

32.3% of households in the AFN villages responded that their financial situation had improved significantly, with their income almost doubling over the project period. 57.8% of households responded that their situation had improved. For the control villages, only 13.4% felt they were better off financially and 29.6% felt their financial situation had stagnated. It can be noted that 15% of households in the control villages feel that their income level has declined compared to the start date of the 2017 project, compared to only 4% in the AFN villages.

The Khmu community, with 41.5% of households reporting better financial conditions, is considered to be the community that most benefitted community from the project activities.

It is worth noting that Oudomxay and Xiengkhouang provinces record a higher household financial situation improvement compared to the results of Phongsaly and Houaphan.

Table 33 : Perception of household financial situation after project implementation

Financial situation perception	AFN	Control	Total
Better financial situation, significant increase	32.3%	13.4%	22.9%
Better financial situation, moderate increase	57.8%	52.0%	54.9%
Same as before	5.2%	19.6%	12.3%
Less income that before	4.5%	13.2%	8.8%
A lot less than before	0.3%	1.7%	1.0%
Total	**100%**	**100%**	**100%**

Table 34: Income generation perception by province after project implementation by province in AFN villages

Financial situation perception	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Better financial situation, significant increase	27.8%	51.6%	26.2%	34.1%	32.3%
Better financial situation, moderate increase	64.3%	43.7%	58.3%	57.9%	57.8%
Same as before	5.2%	0.0%	7.1%	6.3%	5.2%
Less income that before	2.8%	4.8%	7.5%	1.6%	4.5%
A lot less income than before	0.0%	0.0%	0.8%	0.0%	0.3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 35: Perception of household financial situation after project implementation by ethnicity in AF villages

Row Labels	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Better financial situation, significant increase	17.1%	36.2%	41.5%	25.9%	31.0%	11.2%	32.3%
Better financial situation, moderate increase	56.1%	50.7%	49.8%	68.9%	64.3%	77.5%	57.8%
Same as before	12.2%	10.1%	2.9%	3.7%	2.4%	5.6%	5.2%
Less income that before	14.6%	2.9%	5.1%	1.5%	2.4%	5.6%	4.5%
A lot less income than before	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

7.3.2 Comparative Analysis

The comparative table below shows the average on farm income reported at the three main survey periods. A total increase of 92% in on farm income was calculated, from LAK 7.3 million before the start of the project to LAK 14 million at the end of the project. This increase is less significant for the provinces of Phongsaly and Houaphan, respectively a 23% and 37% increase, compared to Xiengkhouang and Oudomxay provinces, with increases of on farm incomes by 117% and 89% respectively. The income calculation integrates local currency depreciation and cost of living inflation.

Table 36: Average On farm household income per survey period in AFN villages

Province	Baseline	Midline	Endline	Increase over Baseline
Houaphan	5.86 M₭	9.72 M₭	8.0 M₭	**37%**
Oudomxay	7.08 M₭	8.11 M₭	13.37 M₭	**89%**
Phongsaly	6.23 M₭	6.46 M₭	7.68 M₭	**23%**
Xiengkhouang	12.44 M₭	16.87 M₭	27.0 M₭	**117%**
Total	**7.29 M₭**	**9.81 M₭**	**14.01 M₭**	**92%**

7.4 FOOD SECURITY

7.4.1 Months of Adequate Household Food Provisioning (MAHFP)

Food insecurity is measured by an index called MAHFP, which is the equivalent to the calculation of the number of months a household experiences a lack of food self-sufficiency. The highest score of 12 relates to a household with no food shortages. There is no significant difference between the AFN villages and the control villages, where only 5% of the households reported seeing food shortage, which corresponds to more than 3 months of lack of food supply. With 7% of households experiencing 3 or more months of food insecurity, Houaphan is the province with the highest food insecurity.

Table 37: Household ever experienced food shortages in the past 12 months by province

Province	HHs Having food insecurity	
	AFN	Control
	% of HHs Having food insecurity	% of HHs Having food insecurity
Houaphan	6.7%	4.4%
Oudomxay	4.0%	4.0%
Phongsaly	3.6%	3.6%
Xiengkhouang	4.8%	10.5%
Total	**4.9%**	**5.1%**

Total Households in the Project Area with an MAHFP Score of 10 or higher: 33,294 x 95.1 % = 31,663 HHs

7.4.2 Comparative Analysis

The comparative table below shows the overall average MAHFP scores over the three survey periods, it indicates a slight decrease in the MAHFP score from 11.5 to 10.8. However, it is worth noting that the percentage of households experiencing a lack of food supply for more than three months dropped from 10% to 5% between the midline and endline studies. We note a homogeneity of the score between the four provinces.

Table 38: MAHFP Score by survey period

Province	AFN			Control			Food insecurity	
	MAHFP Score Baseline	MAHFP Score Midline	MAHFP Score Endline	MAHFP Score Baseline	MAHFP Score Midline	MAHFP Score Endline	Midline	Endline
Houaphan	11.6	11.3	10.8	11.8	10.9	11.1	11%	7%
Oudomxay	11.4	11.9	10.8	11.4	11.9	10.9	2%	4%
Phongsaly	11.7	11.8	10.9	11.7	11.9	10.8	4%	4%
Xiengkhouang	11.6	10.8	10.7	11.8	11.8	11.0	23%	5%
Total	**11.6**	**11.5**	**10.8**	**11.6**	**11.6**	**11.0**	**10%**	**5%**

7.5 ADOPTION OF NEW TECHNOLOGIES

Farmers' groups are organisations where members discuss opportunities, strategies, techniques, and challenges related to a type of agricultural production. Most farmer groups focus on topics related to production (61%), marketing and purchasing (33%). Farmer groups are more represented in livestock production with 63% on average and 37% in crop production. In the breeding we note that 49% of the groups there is to the poultry against 19% for the pigs. In the agricultural cultures the cardamon the corn, the rice is represented to more than 15 %.

Table 39: Household that have members participating in farmer group organisation by province in AFN village

Provinces	Member of a farmer group	Production	Marketing	Purchasing inputs
Houaphan	60.3%	46.8%	17.1%	14.7%
Oudomxay	84.1%	83.3%	57.1%	47.6%
Phongsaly	65.9%	63.9%	31.3%	35.3%
Xiengkhouang	76.2%	61.9%	43.7%	48.4%
Total	**68.8%**	**61.1%**	**32.9%**	**32.7%**

Table 40 : Household members participating in Farmer group and province in AFN villages

Farmer Groups	Province				
	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Livestock	**74.3%**	**56.7%**	**50.7%**	**78.8%**	**63.0%**
Poultry	56.7%	40.9%	56.2%	39.8%	48.7%
Pig	23.4%	14.6%	18.2%	20.3%	19.2%
Goat	1.2%	12.2%	19.0%	11.4%	10.4%
Cattle	11.1%	21.3%	2.9%	27.6%	15.5%
Buffalo	0.6%	11.0%	0.0%	0.0%	3.2%
Other	7.0%	0.0%	3.6%	0.8%	3.0%
Crop	**25.7%**	**43.3%**	**49.3%**	**21.2%**	**37.0%**
Mustard Green	28.8%	20.8%	11.3%	24.2%	18.9%
Rainfed Paddy Rice	3.4%	6.4%	7.5%	24.2%	8.0%
Upland Rice	10.2%	24.0%	15.0%	3.0%	16.3%
Cardamom	0.0%	5.6%	38.3%	0.0%	16.6%
Maize	16.9%	27.2%	1.5%	15.2%	14.6%
Spring Onion	13.6%	3.2%	3.0%	6.1%	5.1%
Other Roots / Tubers	0.0%	2.4%	0.0%	0.0%	0.9%
Other Green Leafy Vegetables	6.8%	5.6%	0.8%	3.0%	3.7%
Onion	1.7%	0.0%	0.8%	0.0%	0.6%
Mushrooms	0.0%	0.0%	0.0%	3.0%	0.3%
Long/Purple Bean	3.4%	0.8%	0.0%	0.0%	0.9%
Irrigated Paddy Rice	0.0%	2.4%	0.0%	9.1%	1.7%
Garlic	3.4%	0.0%	0.0%	0.0%	0.6%
Cassava	0.0%	0.0%	3.8%	0.0%	1.4%
Other	11.9%	1.6%	18.0%	12.1%	10.6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

7.5.1 Technology Adoption

The AFN project selected and trained a significant number of farmers on 19 improved technologies that were adapted to the local level. The technical basis for these new technologies was developed by the National Agriculture and Forestry Research Institute (NAFRI) and the Department of Agriculture Extension and Cooperatives (DAEC). Technical reference guides have been developed and trainings were conducted in the project villages. During the survey, the farmers were asked about their overall satisfaction with the new technologies. In total, 79% of the beneficiary farmers are very satisfied with the adoption of the new technology and 21% are satisfied. It is also indicated in the following table that 61.2% of the farmers report to be often accompanied by the technical staff from the project.

Table 41 : Satisfaction rate of technology adoption activity

Province	satisfied	very satisfied
	%	%
Houaphan	26.5%	73.5%
Oudomxay	11.1%	88.9%
Phongsaly	25.0%	75.0%
Xiengkhouang	12.2%	87.8%
Total	21.0%	79.0%

Table 42: How often meet the project staff

Province	Few/seldom %	Sometimes %	Very often %
Houaphan	1.6%	49.0%	49.4%
Oudomxay	0.0%	34.9%	65.1%
Phongsaly	1.2%	32.4%	66.4%
Xiengkhouang	0.0%	29.3%	70.7%
Total	**0.9%**	**37.9%**	**61.2%**

Table 43 : Technology adoption score by province

Technology	Houaphan		Oudomxay		Phongsaly		Xiengkhouang		Total HHs	Total % of HHs
	#HHs adopted technology	% of HHs scored 1	#HHs adopted technology	% of HHs scored 1	#HHs adopted technology	% of HHs scored 1	#HHs adopted technology	% of HHs scored 1		
1. Vegetable growing (seasonal cropping)	144	**94%**	84	**100%**	97	**72%**	43	**80%**	368	**87%**
2. Native chicken raising	138	**70%**	88	**94%**	141	**78%**	83	**90%**	450	**80%**
3. Integrated farming of grogs and vegetables	1	**50%**	3	**100%**	1	**100%**			5	**83%**
04. integrated farming of catfish in plastic sheet pond with vegetable garden	1	**100%**	1	**100%**	1	**50%**	3	**100%**	6	**86%**
5. Eggplant growing	5	**83%**	4	**100%**	10	**67%**			19	**76%**
6. Cardamom			32	**89%**	99	**92%**			131	**91%**
7. Galangal growing	1	**100%**	3	**60%**	25	**81%**			29	**78%**
8. Long bean growing	8	**80%**	2	**100%**	10	**77%**			20	**80%**
9. Growing oyster mushroom							1	**100%**	1	**100%**
10. Growing garlic	13	**100%**			26	**96%**			39	**98%**
11. Growing Coriander (Off season)	4	**100%**	12	**100%**	9	**69%**	2	**100%**	27	**87%**
12. Piglets production			1	**100%**					1	**100%**
13. Raising native pigs	61	**91%**	33	**92%**	35	**83%**	35	**85%**	164	**88%**
14. Production of baby goats (Goat Kids production)	1	**100%**	2	**100%**	1	**50%**	1	**100%**	5	**83%**
15. Goat raising	6	**67%**	22	**100%**	17	**68%**	17	**77%**	62	**79%**
16. Integrated farming of fish and pig raising	7	**47%**	1	**100%**			2	**100%**	10	**56%**
17. Fish Raising in net cages	1	**100%**							1	**100%**
18. Cow fattening	42	**86%**	41	**98%**	2	**40%**	30	**88%**	115	**88%**
19. Forage planting	7	**50%**	16	**100%**	2	**67%**	1	**11%**	26	**62%**
Total	**230**	**73%**	**125**	**91%**	**217**	**71%**	**117**	**80%**	**689**	**76%**

A technology is only considered as adopted if at least 2/3 of key improved practices per technology, introduced by the project, were adopted by the farmer.

> **Total Households in the Project Area which adopted new technology:**
>
> **13,915 X 76% = 10,575 HHs (only for APG members)**
>
> **27,145 X 76% = 20,630 HHs (APG and Home gardens)**

7.6   DIETARY DIVERSITY

7.6.1 Household Dietary Diversity Score (HDDS)

The HDDS indicator is the reference for calculating the dietary diversity of households. This calculation is based on the number of food groups that a household consumes during the previous 24 hours. The HDDS index lists 12 food groups. The higher the score towards 12, the greater the dietary diversity within the household is.

The comparative table shows that households living in AFN villages have a better dietary diversity score than households living in control villages with a score of 7.4 and 6.4 respectively. The percentage of households that consume more than 5 food groups in a day is 89% in AFN village, compared to 78% for control villages. It is noted that the Akha and Hmong ethnic groups have less dietary diversity than the other ethnic groups.

Table 44: Mean HDDS score by province

| | Village Type | | | |
| | AFN | | Control | |
Province	Average of HDD_Score	% of HH scoring higher than 5	Average of HDD_Score	% of HH scoring higher than 5
Houaphan	7.0	90%	5.8	73%
Oudomxay	7.9	87%	7.2	88%
Phongsaly	7.6	92%	6.4	77%
Xiengkhouang	7.4	83%	7.0	81%
Total	**7.4**	**89%**	**6.4**	**78%**

Table 45: Mean HDDS score by ethnicity

| | Village Type | | | |
| | AFN | | Control | |
Ethnicity	Average of HDD_Score	% HH scoring higher than 5	Average of HDD_Score	% of HH scoring higher than 5
Akha	6.7	85%	6.4	76%
Hmong	6.9	86%	5.1	59%
Khmu	7.5	86%	6.4	78%
Lao	7.6	93%	6.9	86%
Phounoiy	7.8	98%	7.1	90%
Tai	7.7	96%	6.6	83%
Total	**7.4**	**89%**	**6.4**	**78%**

The mean HDDS has increased in each province over the course of the project. The midline survey recorded a higher HDDS score due to the fact that the survey was completed after the harvest season when diverse agriculture products were available on the market.

AFN villages have a better increase (5.2 to 7.4) than control villages (5.4 to 6.4). Houaphan province remains the province with the lowest mean HDDS Score.

7.6.2 HDDS Comparative Analysis

Table 46: Mean HDDS score by survey period

Province	Baseline Survey		Midline Survey		Endline Survey	
	AFN Village	Control Village	AFN Village	Control Village	AFN Village	Control Village
Houaphan	5.4	4.9	8.7	8.2	7.0	5.8
Oudomxay	5.4	5.4	9.7	10.0	7.9	7.2
Phongsaly	4.6	5.2	10.3	9.9	7.6	6.3
Xiengkhouang	5.6	6.2	8.8	8.6	7.4	7.0
Total	**5.2**	**5.4**	**9.4**	**9.1**	**7.4**	**6.4**

For the Mean IDDS index, from a geographical point of view, the province of Houaphan scores lower than the general average (5.25 for children between 6 and 23 months and 6.43 for children between 24 and 59 months). In terms of ethnic groups, the Lao, Hmong, and Khmu groups scored higher than the Akha, Phounoiy and Tai ethnic groups.

7.6.3 Individual Dietary Diversity Score for Children Under 5 Years Old (IDDS)

The following figures show the percentage of children who consume a food belonging to a food group point for children between 6 and 23 months of age. We distinguish 8 food groups for children between 6 and 23 months and 9 food groups for children between 23 and 59 months. There is a significant difference in the consumption of vegetables, eggs, fruit, and flesh food between the baseline and endline studies. Between the AFN and control villages there was a greater dietary diversity to be found in the AFN villages.
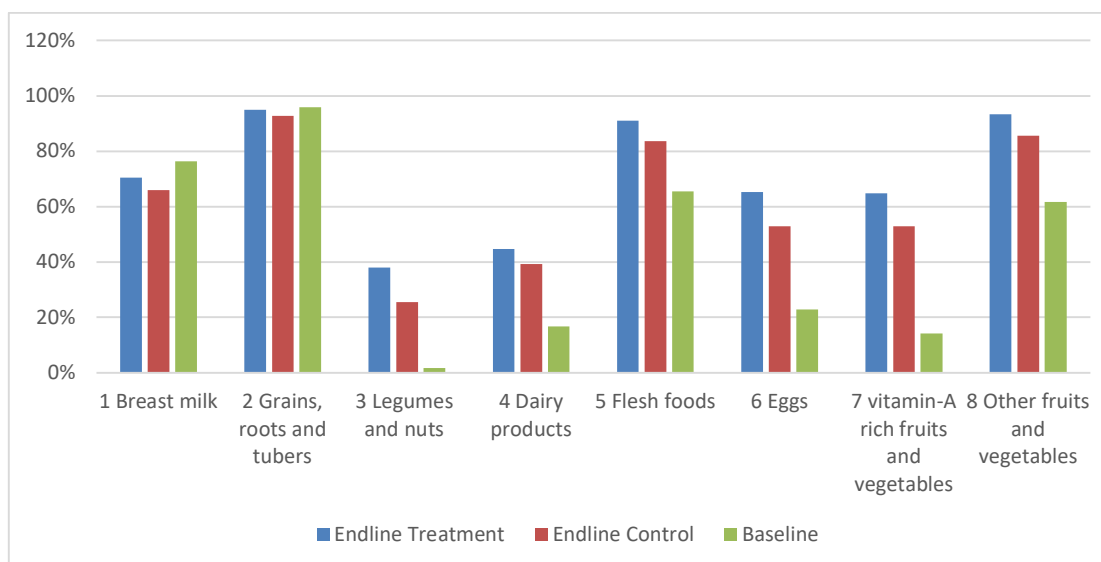
Figure 6: Percentage of 8 food group consumed by survey period (children 6-23 months)
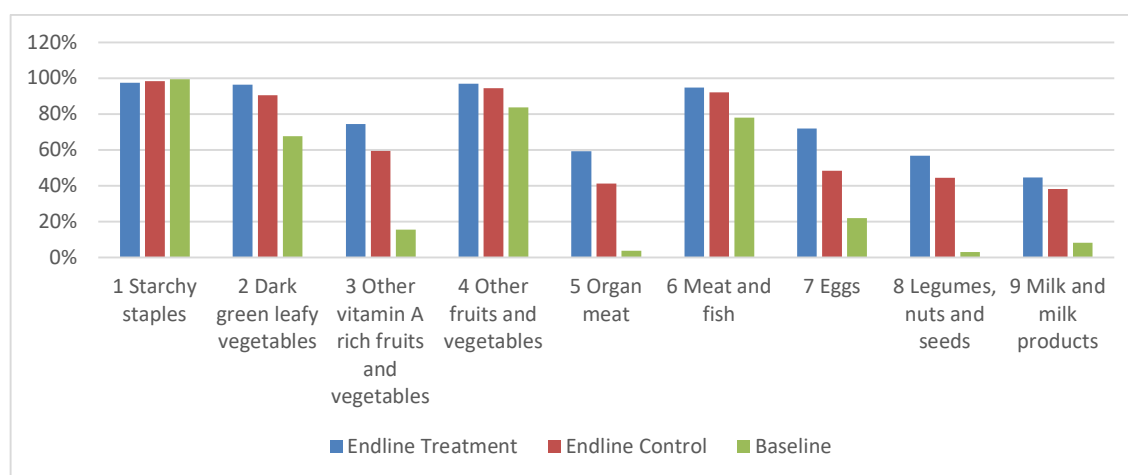
Figure 7: Percentage of 8 food group consumed by survey period (children 23-59 months)

The mean IDDS index calculation shows geographically that Houaphan province scores lower than the general average with just a score of 5.25 for children between 6 and 23 months and 6.43 for children between 23 and 59 months. In terms of ethnic groups, the Lao, Hmong, and Khmu groups scored higher than the Akha, Phounoiy and Tai groups. There is a clear difference visible between AFN and control villages and improvement over baseline.

Table 47: Mean IDDS score by province

	Province				
Mean IDDS	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
children 6-23 months (8 Food Groups)	5.25	5.25	6.02	6.05	5.63
children 24-59 months (9 Food Groups)	6.43	7.41	7.10	7.03	6.93

Table 48: Mean IDDS score by ethnicity

Values	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
children 6-23 months (8 Food Groups)	6.25	5.29	5.58	6.13	5.50	5.75	5.63
children 24-59 months (9 Food Groups)	5.80	6.89	7.41	6.63	6.67	6.28	6.93

7.6.4 IDDS Comparative Analysis

Table 49: Mean IDDS score by survey period

Province	Baseline Survey		Endline Survey			
	All Villages		AFN Village		Control Village	
	6-23 months	24-59 months	6-23 months	24-59 months	6-23 months	24-59 months
Houaphan	3.61	3.75	5.25	6.43	4.40	5.51
Oudomxay	3.63	4.06	5.25	7.41	5.20	7.26
Phongsaly	3.24	3.63	6.02	7.10	5.06	6.18
Xiengkhouang	3.90	3.82	6.05	7.03	5.58	5.56
Total	**3.55**	**3.81**	**5.63**	**6.93**	**4.99**	**6.07**

7.6.5 Minimum Acceptable Diet (MAD)

In order to calculate the Minimum Acceptable Diet score for children aged 6 to 23 months, the data collected in the field was sorted and filtered and then integrated into the spreadsheet provided by WFP. For comparison purposes with previous study results, we used the calculation methodology guideline from 2022. The results allow us to compare the MAD between the control and AFN villages. We see that 54.7% of the AFN villages meet the MAD score, contrary to the control village where only 34.6% of children meet the MAD score.

Table 50: MAD score for children aged 6-23 months

| Age Category | AFN Village | | | | | Control Village | | | | |
| | Number of children | % Breastfed | MAD sub-components | | % Meeting Minimum Acceptable Diet | Number of children | % Breastfed | MAD sub-components | | % Meeting Minimum Acceptable Diet |
			% Meeting Minimum Meal Frequency	% Meeting Minimum Dietary Diversity				% Meeting Minimum Meal Frequency	% Meeting Minimum Dietary Diversity	
6-11 Months	61	93.4%	52.5%	75.4%	52.5%	63	90.5%	33.3%	65.1%	25.4%
12-17 Months	73	69.9%	61.6%	94.5%	61.6%	53	62.3%	37.7%	73.6%	32.1%
18-23 Months	45	26.7%	48.9%	93.3%	46.7%	37	21.6%	59.5%	89.2%	54.1%
Total 6-23 Months	**179**	**67.0%**	**55.3%**	**87.7%**	**54.7%**	**153**	**64.1%**	**41.2%**	**73.9%**	**34.6%**

7.6.6 MAD Comparative Analysis

Regarding the MAD index for breastfed children, a clear increase of 43% of children scoring the MAD in AFN village is reported. While the increase in control village is 11%. Even the increase of the MAD for each province over the course of the project, Oudomxay and Phongsaly provinces have the lower improvement rate compared to other provinces.

The MAD Index for non-breastfed children is lower that breastfed children. However, an increase of 31% over the course of the project is reported for AFN village. Houaphan and Xiengkhouang provinces have scored the highest improvement rates.

Table 51: MAD among breastfed children by province and survey period

| Province | Baseline Survey | | Endline Survey | |
	AFN Village	Control Village	AFN Village	Control Village
Houaphan	24 %	21%	76%	44%
Oudomxay	26%	22%	45%	33%
Phongsaly	15%	18%	55%	15%
Xiengkhouang	19%	28%	72%	54%
Total	**20%**	**23%**	**63%**	**31%**

Table 52: MAD among non-breastfed children by province and survey period

Province	Baseline Survey		Endline Survey	
	AFN Village	Control Village	AFN Village	Control Village
Houaphan	5%	3%	27%	33%
Oudomxay	16%	10%	70%	62%
Phongsaly	4%	4%	39%	38%
Xiengkhouang	9%	29%	25%	36%
Total	**8%**	**11%**	**39%**	**42%**

7.6.7 Minimum Dietary Diversity Score for Women (MDD-W)

The Minimum Dietary Diversity Score for Women (MDD-W) is a population-level indicator of diet diversity validated for women aged 15-49 years old, being the reproductive age. The MDD-W is a dichotomous indicator based on 10 food groups and is considered the standard for measuring population-level dietary diversity in women of reproductive age. Women who have consumed at least 5 of the 10 possible food groups over a 24-hour recall period are classified as having minimally adequate dietary diversity. The MDD-W Score in the AFN villages (6.92) is slightly higher than control villages (6.15) and 89% of women in AFN village are considered to have reached minimum dietary diversity. Houaphan province has the lower MDD-W score (6.75), and the Akha ethnic group has the lowest score (6.38) and the lower percentage of women having minimum adequate diet diversity (83%) in the AFN villages.

Table 53: Mean MDD-W score by province

	Village type					
	AFN			Control		
Province	#Women 15-49	% of women scoring higher than 5	MDDW Score	#Women 15-49	% of women scoring higher than 5	MDDW Score
Houaphan	244	91%	**6.75**	223	83%	**5.92**
Oudomxay	124	85%	**7.1**	115	82%	**6.53**
Phongsaly	234	90%	**6.97**	229	75%	**5.94**
Xiengkhouang	120	87%	**6.98**	118	81%	**6.63**
Total	**722**	**89%**	**6.92**	**685**	**80%**	**6.15**

Table 54: Mean MDD-W score by ethnicity

	Village type					
	AFN			Control		
Ethnicity	#Women 15-49	% of women scoring higher than 5	MDDW _Score	#Women 15-49	% of women scoring higher than 5	MDDW_S core
Akha	39	83%	**6.38**	69	71%	**5.88**
Hmong	136	86%	**6.45**	96	66%	**5.38**
Khmu	300	88%	**7.02**	260	78%	**6.12**
Lao	127	93%	**7.24**	177	88%	**6.66**
Phounoiy	33	95%	**6.91**	18	90%	**7**
Tai	87	91%	**7.09**	65	89%	**6.09**
Total	**722**	**89%**	**6.92**	**685**	**80%**	**6.15**

> **Total number of women at reproductive age (15-49 years) in Project Area that have reached dietary diversity:**
>
> **Beneficiaries from project activities x Average HH size x % of reproductive women in HH x MDDW score higher than 5**
>
> **27,145 x 5.8 x 24.8 x 89% = 34,750 women**

7.6.8 MMD-W Comparative Analysis

For the MDD-W score, the midline survey reported a higher score (7.39) compared to the endline survey (6.92), which is most likely due to the timing of the survey. However, we note that 89 % of women have passed the minimum acceptable dietary diversity, which is 1 % higher than the result of the midline survey.

Table 55: Mean MDD-W score by ethnicity and survey period, AFN villages

Ethnic group	Midline Survey		Endline Survey	
	Average MDD-W Score	% of women scoring higher than 5	Average MDD-W Score	% of women scoring higher than 5
Akha	7.18	86%	6.38	83%
Hmong	7.08	86%	6.45	86%
Khmu	7.44	86%	7.02	88%
Lao	8.50	100%	7.24	93%
Phounoiy	6.38	69%	6.91	95%
Tai	7.61	93%	7.09	91%
	7.39	**88%**	**6.92**	**89%**

Table 56:Mean MDD-W score by province and survey period, AFN villages

Province	Midline Survey		Endline Survey	
	Average MDD-W Score	% of women scoring higher than 5	Average MDD-W Score	% of women scoring higher than 5
Houaphan	6.91	81%	6.75	91%
Oudomxay	7.84	91%	7.10	85%
Phongsaly	8.06	94%	6.97	90%
Xiengkhouang	6.79	86%	6.98	87%
	7.39	**88%**	**6.92**	**89%**

7.7   SALES OF AGRICULTURAL PRODUCT

The production of agricultural products depends on districts and provinces, while Xiengkhouang sees its main production of corn and Job's tears, rubber production is largely present in Phongsaly and Xiengkhouang. Is also important to note that the Lao ethnic groups concentrate their production on corn, rice, and rubber, while the Khmu ethnic group are more diversified but generating less income form agriculture product sales.

7.7.1 CROPS
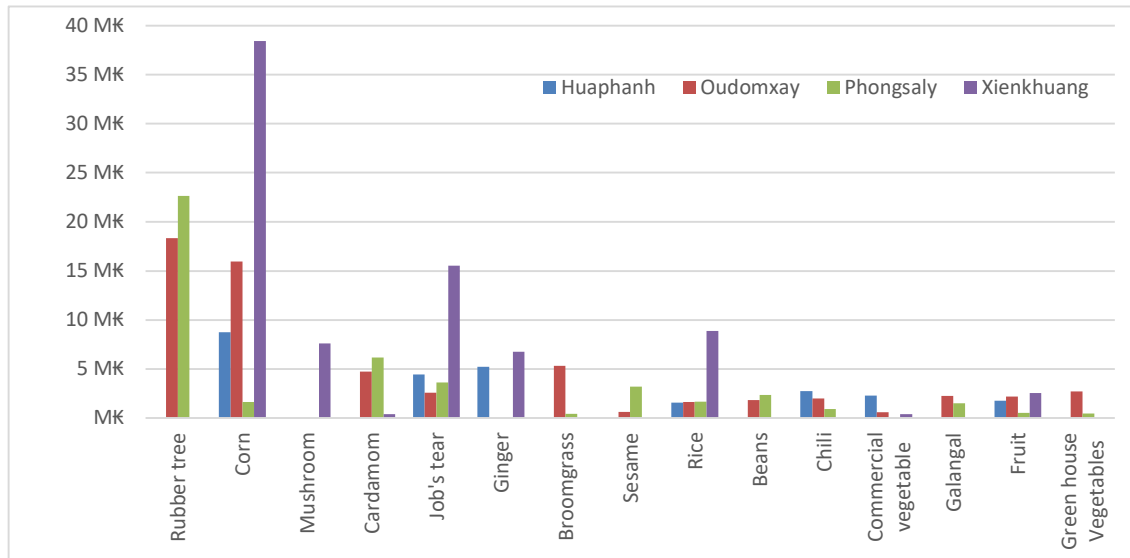
Figure 8: Average income generated by crop sales by province
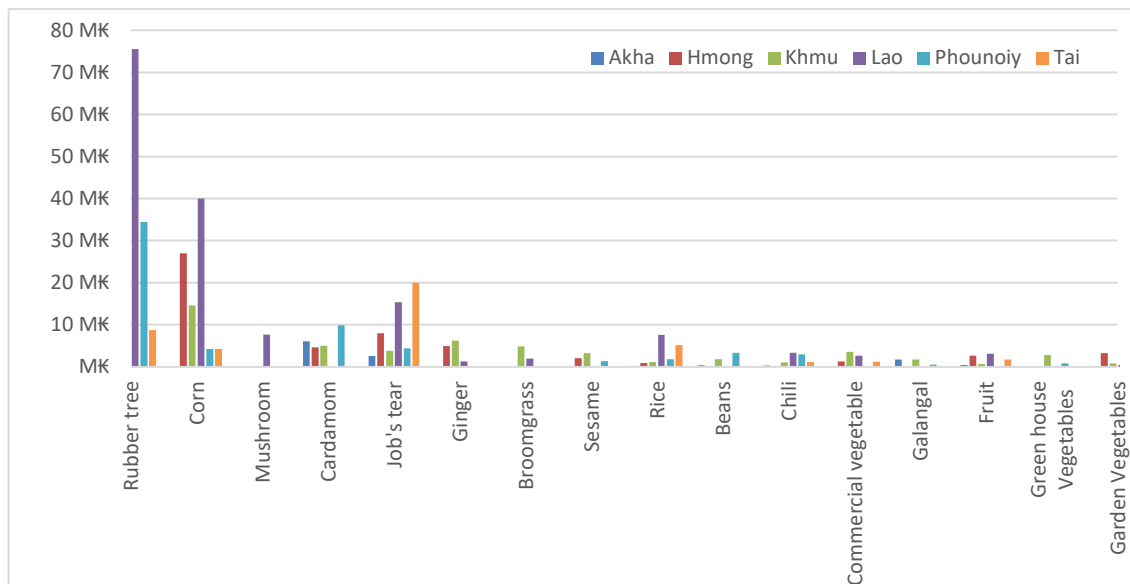
Figure 9: Average income generated by crop sales by ethnicity

7.7.2 LIVESTOCK

In terms of livestock, large animals such as cattle and buffalo generate on average more income than small livestock (15 Mₖ). Poultry is the livestock that is highest produced in all provinces and across all ethnic groups but has a lower inflow of income than other livestock (1 Mₖ). The pigs represent an important part of the cash income, in average of 3 million kips. In Xiengkhouang province, pigs generate twice more income (6 Mₖ) and slightly less for the province of Phongsaly (1 Mₖ). There is a noticeable average income of aquaculture in the province of Oudomxay (6 Mₖ).

Goats (4 Mₖ), Pigs (3 Mₖ) and Chickens (1 Mₖ) are homogeneously present in each province and ethnic groups, where cattle are specifically dominant in Xiengkhouang and Phongsaly province among Lao ethnics.
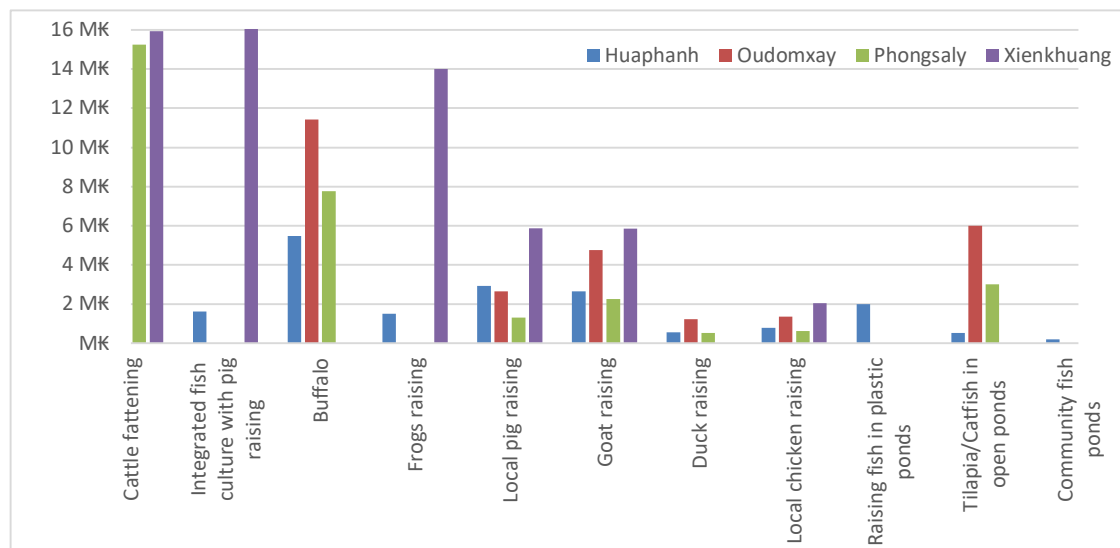
Figure 10: Yearly average income generated of livestock sales by province
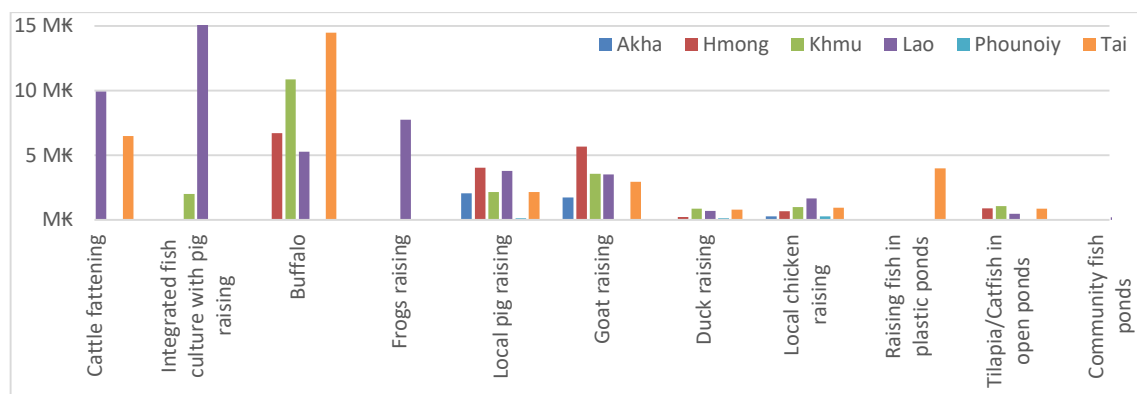
Figure 11 : Yearly average income generated of livestock sales by ethnicity

7.7.3 PRODUCTION AND SALES

The following four tables show us the share of production and sales before the project and during current year (2022), the last year before the project closure. The first table shows the repartition of sales between crop and livestock. The following data was collected in a level of detail that is more precise than the previous table on On-Farm income and therefore the ratios may differ. The increase of sales between pre-project and 2022 is 207%, from LAK 7 million (889 USD) to an average of LAK 21 million per household (1,679 USD).

The second, third and fourth tables shows all the productions where the AFN project has had an impact (i.e., crop or livestock that received trainings and investments) sorted by households received either Garden Grant, Agriculture Production Grant and received Both Grants only.

Table 57 : Total yearly all farm production and sales before project/year 2022 in AFN villages

Product	HHs	Before Project			Current year			Change in Percent		
		Area (Ha)	Production (KG)	Sale (Kips)	Area (Ha)	Production (KG)	Sale (Kips)	Change area	Production	Sale
Crops	637	106	265,995	1857MₖK	1,176	514,935	5634MₖK	1009%	94%	203%
Livestock	616		1,570,077	3425MₖK		2,811,271	10579MₖK		79%	209%
Total	**743**	973.73	1,836,072	**5282MₖK**	1,176	3,326,206	16213MₖK		81%	207%
			Per HH	**7MₖK**		**Per HH**	**21.8MₖK**			
				$889			**$1,679**			

- GARDEN GRANT & APG GRANT

Households that received both grants saw an increase of 77% in production and 167% in sales during the project period. Notably, there was a 95% increase in the share of crops sales and a 225% increase in livestock sales, leading to an increase in average income per household from $328 to $878.

In terms of crops, there were a clear improvement in the share of garden vegetables, with a 535% increase in sales and 156% increase in production, and a 74% increase for cardamom sales.

For livestock, there were an increase of 225% in cattle, 128% in pigs and 162% in chickens.

Table 58: GG & APG Detail of total yearly project selected farm production and sales before project/year 2022 in AFN villages

Product	HHs	Before Project			Current year			Change in Percent		
		Area (Ha)	Production (KG)	Sale (Kips)	Area (Ha)	Production (KG)	Sale (Kips)	area	Production	Sale
Crops	**207**	**116**	**47,539**	**618 MₖK**	**178**	**84,590**	**1206 MₖK**	**53%**	**78%**	**95%**
Cardamom	144	103.46	16,291	529 MₖK	158.06	32,919	923 MₖK	53%	102%	74%
Garden Vegetables	115	5.45	12,789	27 MₖK	9.95	32,763	174 MₖK	83%	156%	535%
Sesame	22	5.07	3,451	30 MₖK	6.25	4,104	71 MₖK	23%	19%	141%
Beans	12	2.16	14,565	23 MₖK	2.06	13,870	23 MₖK		-5%	1%
Commercial vegetable	4	0.01	180	7 MₖK	-	170	8 MₖK		-6%	4%
Chili	8	0.06	153	1 MₖK	0.99	303	6 MₖK		98%	515%
Green house Vegetables	4	0.02	100		0.20	361	1 MₖK		261%	
Commercial Garlic	1	0.01	10		0.01	100		0%	900%	
Livestock	**318**		**104,422**	**776 MₖK**		**184,697**	**2520 MₖK**		**77%**	**225%**
Cattle fattening	119		76,141	471 MₖK		141,840	1691 MₖK		86%	259%
Local pig raising	118		13,337	141 MₖK		14,908	321 MₖK		12%	128%
Local chicken raising	241		8,207	114 MₖK		13,614	299 MₖK		66%	162%
Goat raising	44		6,178	41 MₖK		13,724	192 MₖK		122%	372%
Duck raising	32		559	9 MₖK		611	17 MₖK		9%	82%
Total	**351**	116	151,961	**1393 MₖK**	178	269,287	3725 MₖK	53%	77%	167%
			Per HH	**4.0 MₖK**		**Per HH**	**10.6 MₖK**			
				$328			**$878**			

- GARDEN GRANT

For households that solely received a garden grant, there was a 95% increase in crops production and 114% in sales. Overall crop and livestock production rose by 168%, leading to an increase in the average household income from US$298 to US$766.

Table 59: GG Detail of total yearly project selected farm production and sales before project/year 2022 in AFN villages

Product	HHs	Before Project			Current year			Change in Percent		
		Area (Ha)	Production (KG)	Sale (Kips)	Area (Ha)	Production (KG)	Sale (Kips)	area	Production	Sale
Crops	**111**	**45**	**19,567**	**185 MK**	**77**	**38,222**	**397 MK**	**70%**	**95%**	**114%**
Cardamom	54	39.86	13,398	148 MK	58.42	19,366	281 MK	47%	45%	90%
Garden Vegetables	67	3.02	4,089	11 MK	12.20	9,191	48 MK	304%	125%	356%
Sesame	7	-	120	1 MK	0.44	752	24 MK		527%	2100%
Beans	9	1.70	1,256	11 MK	3.42	1,278	19 MK	101%	2%	79%
Commercial vegetable	4	-	99	10 MK	1.20	5,365	8 MK		5319%	-21%
Chili	5	0.25	345	1 MK	0.60	1,510	8 MK	140%	338%	582%
Green house Vegetables	1				0.01	200	6 MK			
Commercial Garlic	7	0.23	260	4 MK	0.33	560	3 MK	43%	115%	-30%
Livestock	**144**		**51,757**	**205 MK**		**153,345**	**1113 MK**		**196%**	**442%**
Cattle fattening	63		33,052	81 MK		97,269	884 MK		194%	999%
Local pig raising	52		6,353	63 MK		24,060	87 MK		279%	38%
Local chicken raising	115		9,251	31 MK		26,011	80 MK		181%	158%
Goat raising	14		1,179	18 MK		3,092	37 MK		162%	104%
Duck raising	26		1,922	12 MK		2,913	24 MK		52%	94%
Total	**163**	**45**	**71,324**	**391 MK**	**77**	**191,567**	**1510 MK**	**70%**	**169%**	**286%**
		Per HH	2.4 MK			Per HH	9.3 MK			
			$198				$766			

- APG GRANT

Households that only received the APG grant saw a 74% increase in production and a 245% increase in livestock sales. The increase in overall crop and livestock production was 87%, and sales increased by 263%, leading to an increase in the average household income from $363 to $952.

Table 60: APG Detail of total yearly project selected farm production and sales before project/year 2022 in AFN villages

Product	HHs	Before Project			Current year			Change in Percent		
		Area (Ha)	Production (KG)	Sale (Kips)	Area (Ha)	Production (KG)	Sale (Kips)	area	Production	Sale
Crops	**79**	**42**	**18,249**	**268 MK**	**66**	**42,621**	**403 MK**	**57%**	**134%**	**51%**
Cardamom	52	39.21	7,542	242 MK	58.81	15,739	326 MK	50%	109%	35%
Garden Vegetables	35	0.33	1,975	3 MK	2.51	8,091	23 MK	655%	310%	623%
Sesame	5	0.36	3,000	8 MK	1.26	8,500	19 MK	250%	183%	153%
Beans	6	1.29	212	3 MK	2.59	796	15 MK	101%	275%	510%
Commercial vegetable	5	0.35	5,300	11 MK	0.25	5,320	13 MK	-28%	0%	21%
Chili	2	0.10	70	1 MK	0.10	175	3 MK	2%	150%	160%
Green house Vegetables	1	-	-	MK	-	-	2 MK			
Commercial Garlic	1	0.10	150	1 MK	0.20	4,000	2 MK	100%	2567%	100%
Livestock	**125**		**67,375**	**364 MK**		**117,118**	**1255 MK**		**74%**	**245%**
Cattle fattening	44		55,776	245 MK		99,075	919 MK		78%	274%
Local pig raising	56		3,202	60 MK		10,328	206 MK		223%	246%
Local chicken raising	90		6,856	38 MK		4,848	73 MK		-29%	92%
Goat raising	14		1,299	19 MK		2,582	53 MK		99%	178%
Duck raising	12		242	2 MK		285	5 MK		18%	124%
Total	**144**	**42**	**85,624**	**632 MK**	**66**	**159,739**	**1659 MK**	**57%**	**87%**	**163%**
		Per HH	4.4 MK			Per HH	11.5 MK			
			$363				$952			

7.8 KNOWLEDGE, ATTITUDE, AND PRACTICES (KAP)

7.8.1 Objectives

The KAP indicators were measured to better understand general household knowledge about food and cultural practices. In this study we strictly applied the methodology indicated in the IFAD COI guideline. Some items and questions will be extracted and reused in a comparative table between the baseline study and the final study.

The questions related to component E and component F on dietary, food practices and cultures are globally understood by all the households that participated in the nutrition workshops. The total average score is 90% of understanding for the component E and 83% for the component F. For component D, which relates to the intake of micro-nutrients, the results are lower with an overall average score of 64%. This score can be explained by the use of complicated terms such as Anaemia, Iodine and other scientific terms that can be seen complicated to understand by ethnic communities where the Lao language is not necessarily the native language commonly used.

Table 61: Summary table of KAP questions of Component D, E & F by province

KAP	#HHs	Component D	Component E	Component F
AFN HHs	**730**	**64%**	**92%**	**83%**
Houaphan	246	60%	93%	84%
Xiengkhouang	122	72%	92%	85%
Phongsaly	237	62%	91%	78%
Oudomxay	125	67%	93%	89%
Total	**730**	**64%**	**92%**	**83%**

Table 62: Summary table of KAP questions of Component D, E & F by ethnicity

KAP	#HHs	Component D	Component E	Component F
AFN HHs	**730**	**64%**	**92%**	**83%**
Khmu	297	66%	92%	85%
Hmong	136	60%	91%	82%
Lao	131	71%	94%	87%
Akha	38	51%	87%	75%
Phounoiy	41	64%	95%	78%
Tai	87	59%	91%	79%
Total	**730**	**64%**	**92%**	**83%**

7.8.2 Component D: Intake of Micronutrients

A selection of KAP questions on component D is summarised on the tables below, answers are aggregated by provinces and ethnicity.

Table 63 : KAP: "Do you know what is iodized salt is ?" by ethnicity

Choice	Ethnicity						
	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Yes	76%	78%	92%	97%	86%	84%	88%
No	24%	22%	8%	3%	14%	16%	12%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 64: KAP: "Do you know what iodized salt is?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhuang	Total
Yes	92%	94%	84%	84%	88%
No	8%	6%	16%	16%	12%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 65: KAP: "Have you heard of anemia?" by ethnicity.

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Yes	18%	36%	45%	56%	40%	28%	42%
No	58%	56%	43%	40%	55%	69%	49%
I don't know	24%	8%	12%	4%	5%	2%	9%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 66: KAP: "Have you heard of anemia?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhuang	Total
Yes	31%	44%	43%	60%	42%
No	63%	46%	42%	39%	49%
I don't know	6%	10%	15%	1%	9%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 67 :KAP: "Is lack of Vitamin C is dangerous for your body?" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Yes	55%	78%	84%	83%	81%	67%	79%
No	5%	6%	3%	3%	7%	19%	6%
I don't know	39%	16%	13%	14%	12%	14%	15%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 68: KAP: "Is lack of Vitamin C is dangerous for your body?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Yes	75%	94%	73%	84%	79%
No	9%	1%	6%	5%	6%
I don't know	16%	5%	22%	11%	15%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 69 : KAP: "How often do you consume meat/fish? " by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
At least twice per week	79%	77%	68%	83%	71%	74%	74%
Once per week	16%	18%	31%	14%	29%	22%	24%
Once per month	5%	5%	1%	2%	0%	5%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 70: KAP: "How often do you consume meat/fish?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
At least twice per week	84%	60%	66%	82%	74%
Once per week	14%	40%	30%	14%	24%
Once per month	1%	1%	4%	4%	3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 71: KAP: "How likely do you think a pregnant woman suffer from anemia?" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Not likely	100%	73%	59%	82%	71%	52%	68%
Likely	0%	22%	41%	16%	29%	40%	30%
I don't know	0%	4%	1%	1%	0%	8%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 72: KAP: "How likely do you think a pregnant woman suffer from anemia?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Not likely	83%	44%	60%	81%	68%
Likely	17%	56%	36%	16%	30%
I don't know	0%	0%	4%	3%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 73: KAP: " Some animal products are not suitable for women to eat during early lactation" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Yes	8%	33%	30%	30%	26%	58%	32%
No	71%	57%	65%	61%	60%	35%	59%
I don't know	21%	10%	6%	10%	14%	7%	9%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 74: KAP: " Some animal products are not suitable for women to eat during early lactation" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Yes	37%	25%	31%	34%	32%
No	57%	74%	56%	52%	59%
I don't know	6%	1%	13%	13%	9%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 75: KAP: "why are fruits and vegetables important for the body" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Protect body from illness	37%	59%	52%	60%	60%	25%	51%
rich source of Vit A	42%	34%	44%	34%	36%	70%	43%
prevent night blindness	8%	2%	1%	2%	2%	1%	2%
Other	0%	1%	0%	0%	0%	1%	0%
I don't know	13%	4%	3%	4%	2%	2%	4%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 76: KAP: "why are fruits and vegetables important for the body" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Protect body from illness	51%	40%	53%	60%	51%
rich source of Vit A	45%	58%	38%	32%	43%
prevent night blindness	1%	1%	3%	3%	2%
Other	0%	0%	0%	1%	0%
I don't know	3%	2%	5%	4%	4%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 77: KAP: "why are animal foods important for the body" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
muscle growth	58%	66%	70%	70%	60%	67%	68%
rich source of iron	8%	11%	6%	6%	24%	8%	8%
repair body	18%	17%	19%	18%	17%	22%	19%
Other	3%	2%	1%	2%	0%	0%	1%
I don't know	13%	4%	3%	5%	0%	3%	4%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 78: KAP: "why are animal foods important for the body" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
muscle growth	72%	75%	57%	74%	68%
rich source of iron	6%	8%	12%	7%	8%
repair body	17%	17%	25%	11%	19%
Other	2%	0%	0%	2%	1%
I don't know	4%	0%	5%	6%	4%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

7.8.3 Component E: Feeding Practices/Complementary Feeding

A selection of KAP questions on component E is summarised on the tables below, answers are aggregated by provinces and ethnicity.

Table 79: KAP: "Until what age is it recommended that a mother feeds nothing more than breastmilk?" by ethnicity

Choice	Ethnicity						Total
	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	
From birth to six months	87%	93%	96%	96%	95%	91%	94%
Other	3%	5%	3%	2%	0%	3%	3%
Don't know	11%	1%	1%	2%	5%	6%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 80: KAP: "Until what age is it recommended that a mother feeds nothing more than breastmilk?" by province

Choice	Province				Total
	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	
From birth to six months	95%	100%	89%	98%	94%
Other	3%	0%	7%	0%	3%
Don't know	2%	0%	5%	2%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 81: KAP: "At what age should babies start eating foods in addition to breastmilk?" by ethnicity

Choice	Ethnicity						Total
	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	
At six months	92%	95%	93%	95%	100%	92%	94%
Other	0%	4%	6%	5%	0%	6%	5%
I don't know	8%	1%	1%	0%	0%	2%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 82: KAP: "At what age should babies start eating foods in addition to breastmilk?" by province

Choice	Province				Total
	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	
At six months	90%	99%	93%	97%	94%
Other	9%	0%	5%	2%	5%
I don't know	1%	1%	2%	2%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 83: KAP: "How confident do you feel in preparing food for your child?" by ethnicity

Choice	Ethnicity						Total
	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	
Confident	92%	96%	98%	100%	100%	95%	98%
Not confident	8%	4%	2%	0%	0%	5%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 84: KAP: "How confident do you feel in preparing food for your child?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Confident	98%	97%	96%	99%	98%
Not confident	2%	3%	4%	1%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 85: KAP: "How difficult is it for you to feed your child several times each day?" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Not difficult	71%	85%	83%	92%	100%	88%	86%
difficult	24%	14%	17%	8%	0%	11%	13%
I don't know	5%	1%	0%	0%	0%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 86: KAP: "How difficult is it for you to feed your child several times each day?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Not difficult	86%	83%	87%	87%	86%
difficult	14%	17%	12%	11%	13%
I don't know	0%	0%	1%	2%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

7.8.4 Component F: Food Cultural Practices

A selection of KAP questions on component E is summarised on the tables below, answers are aggregated by provinces and ethnicity.

Table 87: KAP: "Which type of foods should not be consumed by young children (1-5 year)" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Vegetables	0%	0%	1%	2%	2%	3%	1%
Protein rich foods	0%	0%	0%	0%	0%	0%	0%
Fruits	0%	3%	6%	2%	19%	8%	6%
Should consume all	92%	94%	91%	96%	76%	88%	91%
I Don't know	8%	3%	2%	0%	2%	1%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 88: KAP "Which type of foods should not be consumed by young children (1-5 year)" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Vegetables	0%	1%	0%	0%	0%
Protein rich foods	1%	8%	10%	2%	6%
Fruits	1%	0%	2%	0%	1%
Should consume all	97%	91%	84%	96%	91%
I Don't know	1%	0%	4%	2%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 89 : KAP: "Do you process any food to ensure additional food availability in case of shortage" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Yes, with traditional methods	95%	85%	90%	94%	93%	88%	90%
Yes, with basic technologies	0%	1%	5%	3%	2%	2%	3%
No, I do not process any foods	5%	14%	6%	3%	5%	10%	7%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 90: KAP: "Do you process any food to ensure additional food availability in case of shortage" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Yes, with traditional methods	94%	88%	87%	88%	90%
Yes, with basic technologies	1%	11%	0%	4%	3%
No, I do not process any foods	5%	1%	12%	8%	7%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 91: KAP: "Main method used to cook vegetables "by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Boil and discard water	11%	54%	19%	64%	7%	57%	37%
Boil and use the water	87%	23%	75%	15%	88%	38%	52%
Wash and eat them raw	0%	2%	1%	5%	0%	1%	2%
Steaming	0%	0%	2%	3%	0%	1%	1%
Shallow frying	3%	21%	3%	13%	5%	3%	8%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 92: KAP: "Main method used to cook vegetables "by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Boil and discard water	69%	2%	6%	69%	37%
Boil and use the water	15%	90%	89%	13%	52%
Wash and eat them raw	4%	2%	0%	0%	2%
Steaming	1%	1%	1%	3%	1%
Shallow frying	10%	6%	4%	15%	8%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 93: KAP: "Do you have heard about night blindness?" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Yes	11%	32%	31%	45%	29%	41%	34%
No	55%	60%	54%	48%	64%	55%	55%
Don't know	34%	9%	15%	8%	7%	5%	12%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 94: KAP: "Do you have heard about night blindness?" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Yes	30%	31%	34%	44%	34%
No	61%	60%	46%	52%	55%
Don't know	9%	10%	20%	3%	12%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 95 : KAP: "I believe that commercial milk powder or canned milk is good for my baby" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Agree	24%	52%	36%	31%	34%
Disagree	73%	44%	52%	62%	59%
Don't know	3%	4%	12%	7%	7%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 96: KAP: "I believe that commercial milk powder or canned milk is good for my baby "by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Agree	29%	36%	37%	36%	36%	18%	34%
Disagree	45%	60%	55%	60%	60%	78%	59%
Don't know	26%	4%	8%	5%	5%	3%	7%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 97: KAP: "I believe that food like Cerelac or other powders are better than homemade food" by ethnicity

	Ethnicity						
Choice	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Agree	11%	20%	19%	17%	24%	13%	18%
Disagree	61%	75%	70%	80%	69%	74%	72%
Don't know	29%	5%	11%	3%	7%	14%	10%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 98: KAP: "I believe that food like Cerelac or other powders are better than homemade food "by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Agree	11%	22%	20%	23%	18%
Disagree	82%	70%	65%	72%	72%
Don't know	7%	8%	16%	5%	10%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 99: KAP: "I cannot feed my child with more nutritious food because it's expensive" by ethnicity

Choice	Ethnicity						
	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Agree	37%	34%	30%	42%	19%	34%	33%
Disagree	42%	59%	66%	57%	74%	61%	62%
Don't know	21%	7%	4%	2%	7%	5%	5%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 100: KAP: "I cannot feed my child with more nutritious food because it's expensive" by province

Choice	Province				
	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Agree	44%	23%	31%	26%	33%
Disagree	54%	77%	59%	66%	62%
Don't know	2%	0%	10%	8%	5%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 101: KAP: "Prefer to listen advice from family member than health care staff" by ethnicity

Choice	Ethnicity						
	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Agree	16%	27%	23%	23%	17%	41%	25%
Disagree	68%	60%	75%	69%	83%	59%	70%
Don't know	16%	13%	2%	8%	0%	0%	6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 102: "Prefer to listen advice from family member than health care staff" by province

Choice	Province				
	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Agree	22%	13%	30%	34%	25%
Disagree	73%	86%	65%	53%	70%
Don't know	5%	1%	5%	13%	6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 103 : KAP: "I continue to work as usual when I am pregnant" by ethnicity

Choice	Ethnicity						
	Akha	Hmong	Khmu	Lao	Phounoiy	Tai	Total
Agree	11%	11%	7%	14%	2%	16%	10%
Disagree	82%	86%	92%	86%	95%	84%	89%
Don't know	8%	3%	1%	1%	2%	0%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 104 : KAP: "I continue to work as usual when I am pregnant" by province

	Province				
Choice	Houaphan	Oudomxay	Phongsaly	Xiengkhouang	Total
Agree	17%	3%	5%	11%	10%
Disagree	82%	97%	93%	85%	89%
Don't know	1%	0%	2%	3%	2%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

7.8.5 Comparative Analysis

The comparative table of a set of KAP questions between the responses during the baseline study and the final study shows overall a clear improvement and understanding of issues related to nutrition and dietary diversity necessary for the proper development of infants and young children.

In Xiengkhouang province, a distinctiveness is reported on the question to the reputation that the households have regarding the health professionals. The confidence has dropped from 90% to 53% for this data, where all the household interviewed in other provinces have a great confidence. No clear explanation for this significant drop has been found.

Table 105: KAP Score by survey period

KAP Questions	Houaphan		Oudomxay		Phongsaly		Xiengkhouang		Total		Difference
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Awareness of Anaemia	16%	31%	18%	44%	11%	43%	18%	60%	15%	42%	27%
Lack of iron-rich or Vitamin A food causes anaemia among children	18%	18%	1%	22%	5%	25%	16%	40%	11%	25%	14%
If a woman eats extra during her pregnancy, she will NOT experience difficulties in delivery	56%	57%	49%	75%	50%	59%	63%	70%	54%	63%	9%
Rejecting the idea that some animals products are not suitable for women to eat during early lactation	29%	96%	27%	90%	20%	72%	23%	97%	25%	87%	62%
Can articulate benefits of fruits and vegetables	65%	97%	63%	98%	45%	95%	69%	96%	60%	96%	36%
Can articulate benefits of animal foods	67%	99%	61%	99%	44%	96%	67%	96%	59%	97%	38%
Rejecting the idea that commercial milk powder or canned milk is good for her baby	59%	73%	49%	44%	58%	52%	66%	62%	58%	59%	1%
Rejecting the idea that foods like Cerelac or other powders are better than homemade food	56%	82%	56%	70%	64%	65%	72%	72%	62%	72%	10%
Prefer to listen to advice from health staff over family members	46%	73%	56%	86%	41%	65%	90%	53%	55%	70%	15%
Working less during pregnant	72%	82%	74%	97%	67%	93%	78%	85%	72%	89%	17%
Aware of iodized salt	68%	92%	69%	94%	59%	84%	58%	84%	64%	88%	24%
Use iodized salt in household	91%	89%	99%	94%	97%	82%	92%	78%	94%	86%	-8%

8   CONCLUSION

The findings of the survey indicate that the results obtained for the AFN villages in comparison to the control village are superior on all the topics covered, however there are geographical and ethnic disparities. Houaphan province and the Akha ethnic group have scores lower than the overall average. The follow-up AFN-II project should continue to identify ways to reach and address the specific needs of ethnic groups that keep lagging behind in some of the indicators. This could include involving more local leaders and volunteers into project activities, ensuring that the materials in local languages or pictures are culturally sensitive and give the desired message.

Comparative analyses between the baseline, the midline study, and the endline studies show an overall improvement in all of the indicators. The differences found during this endline survey between AFN villages and control villages in the same districts, covered under the Convergence Approach, show that the AFN activities, together with the health activities of the HGNDP project, have had a strong impact in these areas suggesting that the multifaceted, convergent approach remains necessary and that AFN activities could be scaled-up in the other villages of the convergence districts.

The Agriculture for Nutrition (AFN) project has demonstrated positive impacts in improving food security and nutrition through agricultural development in 12 districts of four northern provinces in Lao PDR. The project has focused on expanding and intensifying the production of nutrition-dense plant-based foods, production, and promotion of animal-based protein for household consumption, improved post-harvest handling and food processing, and promotion of income-generating activities, with a focus on women. The endline survey predicts a reduction in stunting and underweight, as well as showing an improvement in income and financial situations of the beneficiary households.

The project successfully adapted 19 new technologies to the local level, which led to a significant increase in sales and production.

While the economic situation was unstable and unpredictable due to global events like the COVID-19 pandemic and the energy resource crisis leading to a high inflation rate of the dollar and the depreciation of the local currency, despite these challenges, the report shows a clear improvement in the income of beneficiaries in the project implementation area.

The poverty line was re-estimated at 326 USD due to inflation, and the beneficiary populations of the project remained 46.4% below the poverty level. This indicates that there is still work to be done to lift these populations out of poverty, but the AFN project has made good progress in this area. The report also shows that the number of households with income over the poverty line and those with a 30% increase in on-farm income from baseline increased considerably.

Furthermore, the study measured KAP indicators to understand household knowledge about food and cultural practices, and the results showed an overall improvement in knowledge and understanding.

The AFN project has managed to achieve its objectives and contribute to improving food security and nutrition in the project area. Overall, the project has provided valuable insights into effective approaches for improving food security and nutrition in Lao PDR.

9   ANNEX

9.1   TRAINING PROGRAM

18-19-20 ເດືອນຕຸລາ 2022

AFN ENDLINE SURVEY-ENUMERATOR TRAINING

ຝຶກອົບຮົມ

ການສຳຫລວດໄລຍະສຸດທ້າຍ - ໂຄງການກະສິກຳເພື່ອໂພຊະນາການ (AFN)

Location : Faculty of Engineering It Dept, ກະຊວງສຶກສາທິການ ແລະ ກິລາປະເທດລາວຫລັງ

ຄະນະ ວິສະວະກຳໄຟຟ້າ

	ມື້ທີ 1
08:30	Subscription ການເປີດຝຶກອົບຮົມ/ລົງທະບຽນ
09:00-10:00	Ice breaker game - Team member presentation ທັງາຍກຍ, ແບ່ງກຸ່ມທິມ ແລະ ຜູ້ນຳທາງແນະນຳຄວາມຜູ້ໃຫ້ກະວະພຶກ ໃນເກມໃຫ້ກຸ່ມ ແລະ ກຸ່ມ
10:00-10:40	Presentation of the Objective of the end line survey ລາຍງານບົດໆຈຸດປະສົງຂອງການເນີ້ນກິດທ່ານຫ້ມຸນ ແລະ ຄຳຫຼຸດ ໂພຊະສຸດທ້າຍ ຂອງໂຄງການ
10:30	Break ພັກຜ່ອນ
10:40-12:00	Introduction to the questionnaire ນຳສະເໜີກ່ຽວກັບແບບສອບຖາມ
12:00 - 13:00	Lunch time ພັກກິນເຂົ້າທ່ງາ
13:00-15:00	Q&A and explanation about the questionnaire ຖາມຕອບ ແລະ ອະທິບາຍເພິ່ມເຕີມ ກ່ຽວກັບແບບສອບຖາມ
15:00-16:00	Introduction to smartphone data collection system ນຳສະເໜີລະບົບການເກັບກຳຫ້ມຸນ ໂດຍການນຳໃຊ້ໄອໂພຊະລິບ ຫຼື ແທັບແລ໌ດ (tablet)
16:00-17:00	Practise : Use of a simple ODK questionnaire on ODK Collect App ຝຶກໃຊ້ໃນກິດ: ຝຶກການໃຊ້ໄອໂພຊະລິບ ຜ່ານພື້ນງານແບບສອບຖາມເບື້ອງຕົ້ນໆ ໂດຍນຳໃຊ້ ແອັບ ໂອດີເກ (ODK app)

ມື້ 2		
08:30	Subscription	
	ການເປີດຝຶກອົບຮົມ/ລົງທະບຽນ	
09:00-10:30	Practise of the endline questionnaire on smartphone	
	ຮຽນຮູ້ການດຳເນີນໃຫ້ໄປແລະສືບ ຖ້ ເທັບເບລດ ໃນການເກັບຂໍ້ມູນ ຕາມແບບສອບຖາມ ການສໍາຫຼວດໂລຍະ ສຸດທ້າຍ ຂອງໂຄງການ	
10:30	Break	
	ພັກຜ່ອນ	
10:40-12:00	Practise of the endline questionnaire on smartphone	
	ສືບຕໍ່: ຮຽນຮູ້ການດຳເນີນໃຫ້ໄປແລະສືບ ຖ້ ເທັບເບລດ ໃນການເກັບຂໍ້ມູນ ຕາມແບບສອບຖາມ ການສໍາຫຼວດ ໂລຍະສຸດທ້າຍ ຂອງໂຄງການ	
12:00 - 13:00	Lunch time	
	ພັກກິນເຂົ້າທ່ຽງ	
13:00-16:00	Mock interview practice	
	ສະແດງຝຶກໃນທີມ ຈາລອງສະຖານະການ ແລະ ຝຶກເກັບຂໍ້ມູນ	
16:00-17:00	Question and review	
	ຖາມ ຖ້ ໃຫ້ຄຳຕອບເພີ່ມ ແລະ ທວນຄືນ	

ມື້ 3		
08:30	Subscription	
	ການເປີດຝຶກອົບຮົມ/ລົງທະບຽນ	
9:00-10:30	Practise : How to review, edit and send data with ODK collect	
	ຝຶກວິທີການກວດເບິ່ງຂໍ້ມູນຄືນ, ການແປງ ແລະ ການສົ່ງຂໍ້ມູນ ໂນ ແອັບໄອດີເກ (ODK)	
10:30	Break	
	ພັກຜ່ອນ	
10:40-12:00	Practise on Income Houshold calculation	
	ຮຽນຮູ້ວິທີການຄິດໄລ່ລາຍຮັບໃນຄົວເຮືອນ	
12:00 - 13:00	Lunch time	
	ພັກກິນເຂົ້າທ່ຽງ	
13:00-16:00	Mock interview practice	
	ສະແດງຝຶກໃນທີມ ຈາລອງສະຖານະການ ແລະ ຝຶກເກັບຂໍ້ມູນ	
16:00-17:00	Question and review	
	ຖາມ ຖ້ ໃຫ້ຄຳຕອບເພີ່ມ ແລະ ທວນຄືນ	

9.2   VILLAGE SAMPLING LIST

Table 106: Demographic data by Villages and survey period.

Province	District	Type	Village	ບ້ານ	Baseline 2017		Endline 2022	
					HH	Pop	HH	Pop
Houaphan	Huameuang	AFN	B. Taohin	ບ. ເຕົ້າຫິນ	38	247	39	229
		AFN	B. Phiengsay	ບ. ພຽງໄຊ	48	217	46	259
		AFN	B. Keoseek	ບ. ແກ່ວຊີກ	36	189	38	188
		Control	B. Hong Oiy	ບ. ໂຮງອ້ອຍ	51	284	51	284
		Control	B. Longang	ບ. ລອ້າງອ້າ	46	343	52	441
	Kuane	AFN	B. Navine	ບ. ນາວິ້ນ	125	640	97	666
		AFN	B. Nanung	ບ. ນາໜັງ	178	1024	173	1170
		AFN	B. Hintung	ບ. ຫິນຕັ້ງ	84	596	89	669
		Control	B. Meuangna	ບ. ເມືອງນາ	104	558	113	596
		Control	B. Nathong	ບ. ນາທອງ	41	226	39	223
	Sone	AFN	B. Thard	ບ. ທາດ	47	297	47	313
		AFN	B. Ngone	ບ. ໂງ່ນ	74	458	82	459
		AFN	B. Houymeuay	ບ. ຫ້ວຍເໜືອຍ	190	1589	230	1781
		Control	B. Xon Neua	ບ. ຊ່ອນເໜືອ	227	1290	226	1128
		Control	B. Xonetai	ບ. ຊ່ອນໃຕ້	232	1187	257	1174
	Xamtay	AFN	B. Phiengdai	ບ. ພຽງດ້າຍ	58	330	61	384
		AFN	B. Naxay	ບ. ນາໄຊ	44	228	42	223
		AFN	B. Houaikik	ບ. ຫ້ວຍກິກ	230	1273	62	341
		Control	B. Nala	ບ. ນາຫຼ່າງ	58	304	55	316
		Control	B. Nakuea	ບ. ນາເກືອ	140	1028	167	1275
Xiengkhouang	Kham	AFN	B. Tha	ບ. ທ່າ	145	619	32	562
		AFN	B. Numchak	ບ. ນ້ຳຈາກ	153	1084	163	1263
		AFN	B. Longpiew	ບ. ລ້ອງປິ໋ວ	313	1693	347	1766
		Control	B. Lanh	ບ. ແລວ້ງ	132	597	105	552
		Control	B. Kangkhae	ບ. ຄ້າງແຄ່	141	1027	143	1128
	Nonghed	AFN	B. nheer	ບ. ເຍຍ	95	574	59	344
		AFN	B. Korthong	ບ. ກໍທອງ	43	364	57	364
		AFN	B. Nong or	ບ. ໜອງອໍ້	78	596	45	195
		Control	B. Phiengmone	ບ. ພຽງມອນ	60	308	68	333
		Control	B. Dindam	ບ. ດິນດຳ	56	330	57	349
Oudomxay	La	AFN	B. Houaipa	ບ. ຫ້ວຍແພ	68	349	80	430

		AFN	B. Houaisong	ບ. ຫ້ວຍຊ້າງ	37	214	50	218
		AFN	B. Houakang	ບ. ຫ້ວແກ້ງ	84	409	80	368
		Control	B. Nongboua	ບ. ໜອງບົວ	102	523	157	613
		Control	B. Bormsom	ບ. ບອມສົ້ມ	85	390	120	506
	Namor	AFN	B. Phukhuea	ບ. ພູເຄືອ	173	1051	177	1117
		AFN	B. Namthong	ບ. ນ້ຳທອງ	75	365	120	578
		AFN	B. Pangdou	ບ. ປາງດູ່	78	488	122	561
		Control	B. namortai	ບ. ນາໝໍໄຕ້	91	493	103	541
		Control	B. Mark Chouk	ບ. ໝາກຈຸກ	74	443	86	482
Phongsaly	Boontai	AFN	B. Nam Mang	ບ. ນ້ຳມາງ			49	247
		AFN	B. Narm larn noi	ບ. ນ້ຳລານນ້ອຍ	52	261	55	300
		AFN	B. Narm kounh may	ບ. ນ້ຳຂຸ້ນໃໝ່	51	318	65	355
		Control	B. Chalouang Mai	ບ. ຈາຫຼວງໃໝ່	84	432	93	537
		Control	B. phier souck	ບ. ເພຍສຸກ	132	688	161	778
	Khua	AFN	B. Lee sou	ບ. ລີຊູ	55	376	60	400
		AFN	B. Houai morn	ບ. ຫ້ວຍມ່ອນ	90	440	94	477
		AFN	B. Houaikhang	ບ. ຫ້ວຍຄ່າງ	27	145	28	149
		Control	B. Bouam phanh	ບ. ບວມພັນ	105	572	107	577
		Control	B. Tang kouck	ບ. ຕາງກົກ	31	66	40	182
	May	AFN	B. Oum proung	ບ. ອຶມໂປຼງ	55	328	32	155
		AFN	B. Mouck gar lar	ບ. ມົກຈາວະ	45	234	47	251
		AFN	B. Houai Chick	ບ. ຫ້ວຍຈິກ	82	346	73	365
		Control	B. Nhar khar	ບ. ຫຍ້າຄາ	38	171	40	203
		Control	B. Houai meun	ບ. ຫ້ວຍໝື່ນ	58	318	63	302
	Samphanh	AFN	B. Nam hang	ບ. ນ້ຳຮາງ	189	1512	359	1959
		AFN	B. mou chee kang	ບ. ມູຈີກາງ	85	433	93	449
		AFN	B. houai thong	ບ. ຫ້ວຍທອງ	31	167	48	192
		Control	B. Soumboun	ບ. ສົມບູນ	107	552	140	670
		Control	B. Narm loi	ບ. ນ້ຳລອຍ	68	348	64	354
Total					**5,519**	**31,932**	**5,848**	**33,291**