



## Combining nutrition education and rural livelihood support in Kenya

Trials of Improved Practices (TIPs) and food related interventions in Kitui county

### Context

The arid and semi-arid areas (ASALs) of Kenya cover nearly 84 percent of the national land and thus present an enormous potential contribution to national agricultural production as well as basic food and income for farmers residing in these areas. About three in every ten Kenyan children aged below two years are stunted. According to the *Kenya Demographic Health Survey* conducted in 2014, Kitui county and West Pokot county had the highest stunting rates nationally at almost 46 percent. This is against a national average stunting rate of 26 percent.

There have been multiple past projects in Kitui county that aimed at improving food security and nutrition, including through the promotion of exclusive breastfeeding, growth monitoring, immunization, complementary feeding and Water, Sanitation and Hygiene (WASH). The United States Agency for International Development (USAID)-funded *Increasing Smallholder Productivity and Profitability (ISPP) project*, implemented between September 2016 and March 2020, was designed by the Food and Agriculture Organization of the United Nations (FAO) to combine nutrition education with rural livelihood support. This approach aimed at **strengthening the capacity of smallholder farmers in agricultural production, water management, and farming as a business**. Furthermore, it aimed at **improving nutrition outcomes of targeted household members** in the semi-arid counties of Kitui, Machakos, Makueni, Taita-Taveta, and Tharaka-Nithi.

The project had a specific component on **Trials of Improved Practices (TIPs)**, aimed at **improving infant and young child feeding practices**. This is done by trying and testing recommendations on different feeding aspects, including food handling and hygiene, food preparation and food safety. The TIPs activities were conducted during the long rainy season of 2019, when Kitui county recorded exceptionally below average rains leading to poor crop performance. Household food stocks were also low due to lack of carryover stocks from the previous failed short rainy season of 2018. For this reason, households were mainly dependent on food purchases to cater for their family meals.

### Key facts



#### Geographic coverage

The “Increasing Small Holder Productivity and Profitability (ISPP)” project covered the semi-arid counties of Kitui, Machakos, Makueni, Taita-Taveta, and Tharaka-Nithi in Kenya. The Trials of Improved Practices (TIPs) activities of the project were specifically implemented in Kitui.



Conforms to UN Kenya map, December 2011



#### Target group

The ISPP project targeted 85 000 farming households that were interested in improving their farming capacities and would be available to attend farmer trainings. The TIPs targeted 100 households with children under 23 months.



#### Food system components

Food supply chains: production, handling and storage; food environments: trade and marketing; consumer behaviour and diets.



#### Gender

Overall, about 71% of the farmers who received support from the project were women. The project implemented a comprehensive **gender-responsive** market development approach where women groups were linked to buyers and financial service providers.

The ISPP project applied an integrated approach in order to develop the capacity of smallholder farmers in agricultural production, water management and farming as a business while improving nutrition outcomes of targeted household members.

## Methodological approach

The overall goal of the ISPP project was to improve food security and nutrition at the household level. This was pursued through three specific objectives:

- **Agriculture production:** Improved agricultural productivity through access and efficient management of water for irrigation, good agricultural practices and climate-resilient agricultural practices. These activities were done with an objective of increasing production of 11 nutrient-rich commodities (bananas, pigeon peas, cow peas, beans and pulses, tomatoes, kales, watermelon, green maize and sorghum).
- **Nutrition:** Improved nutritional status, especially of women and children, through the promotion of healthy diets by the inclusion of kitchen gardens, nutrition education and TIPs as well as food preservation and WASH activities. The project also referred malnourished children to health facilities.
- **Agribusiness:** Support to the transition of smallholder farmers from subsistence to commercial farming, through the promotion of agribusiness, improvement of post-production management and support to market linkages and trade for the 11 targeted commodity value chains.

The United Nations World Food Programme (WFP) supported in the identification of beneficiaries by graduating households from food assistance programmes to food production support by FAO. Out of the 85 000 households targeted by the ISPP project, at least 20 000 caregivers of young children, grandmothers, fathers and older siblings as well as village leaders were targeted for the nutrition education intervention. The **nutrition training focused on building knowledge and skills on basic nutrition, diversification in food production, child care practices, food preparation, food safety and food preservation.** As part of the nutrition education intervention, the TIPs component of the project in particular targeted 100 households and was implemented only in Kitui county.





As part of nutrition education, the TIPs component of the project entails a participatory formative research methodology focused on trying and testing recommendations on improved feeding and food-related practices in people's homes.

### **Trials of Improved Practices (TIPs)**

Trials of Improved Practices (TIPs) are a participatory formative research methodology that involves trying and testing recommendations on improved feeding and food-related practices in people's homes, to see if they are acceptable and feasible to caregivers before wider dissemination. This methodology targeted 100 households and was implemented from April 2019 to November 2019 in Kitui county, Kenya.

The households were selected following these criteria: **interested households, with children under 23 months, who agreed to compare the nutritional status of the children at the beginning and end of the project.** These households also benefitted from other ISPP project activities.

#### **Steps followed in the implementation of the TIPs activities**

- **Preparatory stage** – This stage involved: (a) recruitment of 19 TIPs implementers with the assistance of the county government; and (b) training of implementers on TIPs methodology and nutrition data collection (including anthropometric screening).
- **Implementation stage** – This stage involved:
  - **Community mobilization:** Sensitization of community leaders and identification of households meeting the selection criteria.
  - **Development of seasonal calendars of crop production** immediately undertaken with selected households.
  - **Actual TIPs implementation:** The trained TIPs implementers worked in pairs, with allocated supervisors from the county Ministry of Health and Ministry of Agriculture. Each pair of implementers was allocated 11 to 12 households. The implementation activities included: initial household assessment, counselling visits, recipe preparation and vegetable preservation, and follow up visits.
- **Evaluation stage** – At the end of the TIPs implementation, an evaluation workshop was held to analyze information on acceptable and feasible recipes, acceptable behavioral changes and feeding recommendations. A final anthropometric screening for the TIPs beneficiaries was carried out in October 2019. An analysis workshop was held in November 2019 to generate the final report.

### **How was the “Increasing Smallholder Productivity and Profitability (ISPP)” project nutrition-sensitive?**

FAO's Increasing Smallholder Productivity and Profitability (ISPP) project was nutrition-sensitive because it fostered healthy diets through the promotion of:

- Trials of Improved Practices (TIPs) for selected households with children under 23 months;
- selected nutrient-rich food value chains- production, marketing and consumption;
- kitchen gardening of fruits and vegetables for selected households;
- nutrition education for the majority of the programme participants;
- food preservation and WASH activities in order to improve food safety and hygiene; and
- referral of malnourished children to health facilities.

Farmer groups were supported with the establishment of kitchen gardens and agriculture trainings to produce targeted nutrient-rich commodities.



### Food supply chains: production, handling and storage

- Farmers, as part of farmer groups, were supported with **agriculture trainings** in order to increase the production of the targeted nutrient-rich commodities.
- The project also supported the establishments of **kitchen gardens** in order to diversify diets consumed at the household level. The beneficiaries were provided with assorted vegetable seeds (onions, spinach, collards, and amaranth). The beneficiaries of the TIPs activities also benefited from this.
- The beneficiaries were trained on **vegetable preservation**. They were trained on preservation of vegetables mainly grown in Kitui county, including: cowpeas leaves, Sukuma wiki/kales and pumpkin leaves. This improved vegetable availability at household level during the lean season.

### Food environment: trade and marketing

The ISPP project exploited agribusiness opportunities through a comprehensive **gender-responsive market development approach**. The project supported both male and female farmers through the facilitation of:

- **Agribusiness trainings:** The training package covered modules on topics including farm business management, basic record keeping and contract farming.
- **Contract farming:** The project had a coaching process with the farmer organisations, including women organizations, to strengthen their capacity in engaging in contract farming, negotiation and marketing.

### Consumer behaviour and improved diets

**Nutrition education training** was offered to all households involved in vegetable production. The nutrition training focused on building knowledge and skills on basic nutrition, diversification in food production, child care practices, food preparation, food safety and food preservation.

The TIPs activity in particular aimed at improving children's diets through key activities such as:

- **Nutrition counselling:** Negotiations were carried out with the primary care giver on the most feasible, acceptable dietary and behavioural changes that needed to be tried in order to improve child feeding.
- **Recipes formulation and preparation:** TIPs implementers demonstrated recipe preparation at household level, where caregivers had an opportunity to choose recipes that they found feasible for the households. The project documented 20 recipes that were tried and tested at the household level.
- **Follow up visits:** Three follow up visits were done every two weeks, in order to assess the progress and discuss other potential actions that the caregiver was willing to try in order to further improve child feeding.



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The evidence and testimonies showcased in this good practice have been collected through a desk review of the ISPP project reports and previous field stories documentation done during project monitoring. Furthermore, in collaboration with FAO's Knowledge Sharing Platform on Resilience (KORE) and FAO's Food and Nutrition Division, a nutrition expert developed a questionnaire adapted to different target groups, including community-level beneficiaries and government county staff. The expert then conducted individual interviews with county teams that facilitated TIPs activities in the field focusing on project achievements in terms of nutrition and specifically on TIPs activities.

### **Eunice's story**

Eunice Wango, 45 years old and a farmer in Kitui county, was among the beneficiaries of the ISPP project. Eunice now grows kale, spinach, amaranth and tomatoes in her kitchen garden.

She explained, "In our area, rich people would eat a lot of animal proteins and fats, while poor people would eat a lot of simple carbohydrates and salt. As a result, people were sick all the time. But the nutrition trainings taught us how to balance our meals."

### **Mary, Sub-county agriculture staff**

Mary is a sub-county agriculture staff and a TIPs facilitator. She highlighted how the TIPs activities increased the support given to kitchen garden initiatives at community level in her sub-county. She also mentioned how the TIPs trainings helped to improve hygiene at household level. Household members are now cleaning hands during more frequently during critical times, and are improving their cooking practices. Mary expresses her joy when she recounts, "Many mothers still call me saying 'Come and see that the feeding has improved in my household, Mary!'; or 'Mary, since the programme, I have not taken my child to the hospital as they have not fallen sick again. They feed well and I have really improved on hygiene while cooking and in my compound.'" Mary continues to say, "The TIPs activities, positively impacted our community. We wish it could be implemented for longer durations and scaled up in other regions."



Households that participated in kitchen gardening set aside about 65 percent of vegetables produced for home consumption and the rest was either sold or preserved for future consumption.

## Impacts

### For the whole ISPP project

- **Nutrition**

The Minimum Dietary Diversity for Women (MDD-W) indicator was used to assess the dietary diversity of women in the project implementation regions. The MDD-W indicator is a key measure of diet quality as it is a proxy indicator of higher micronutrient intake among women of reproductive ages (15 - 49 years).

The outcomes revealed that in the second year of the project implementation, over 80 percent of female participants had consumed a diet with minimal diversity with at least 5 out of 10 food groups in the prior 24 hours. In the third year, a reduction was observed to about 25 percent of female participants having consumed a diet with minimal diversity. These results demonstrate that a potential positive impact of the project in improving women's dietary was compromised in the third year. This is explained by the climatic shocks experienced in the region during the period, particularly droughts that led to scarcity of food.

- **Agribusiness**

The project facilitated the linkage of about 20 000 farming households (including female-headed households) to markets. The incremental sales during the project period totaled USD 4 737 864. This is also attributed to the contract farming activities. Furthermore, beneficiary farmers were able to formally sign contracts with private sector companies valued at USD 1 820 971 for the targeted crop commodities, namely French beans, bananas, green grams, watermelon and onions.

- **Agriculture production**

At least 40 percent of the households (i.e. 34 083 households) had established kitchen gardens by the end of the project. Households that participated in kitchen gardening were able to set aside about 65 percent of vegetables produced for home consumption and the rest was either sold or preserved for future consumption. At least 18 percent of total project participants practiced food preservation.

### Particularly, TIPs activities had the following impacts:

- All caregivers whose children had inadequate dietary intake adopted consumption of at least four food groups, thus resulting in a more diversified diet.
- Sixty-three percent of caregivers who could not afford to purchase nutrient-dense foods established kitchen gardens and adopted food preservation practices, specifically of dark green leafy vegetables during high production season.
- Eighty-three percent of caregivers who used to prepare their child's food once a day started to cook different recipes at least twice a day to preserve nutrients, avoid food spoilage and for hygiene purposes.
- Caregivers were advised to increase frequency of feeding depending on the age of the child. Ninety-seven percent of caregivers increased the frequency of feeding to the recommended number of times per day.



## Sustainability

- **Incorporation into farmer groups:** Each household involved in TIPs activities was integrated into existing farmer groups, so as to enhance their production capacities even after the project closed.
- **Testing feasibility of practices:** The TIPs methodology is based on trying and testing practices at the household level. This encourages households to freely accept the practices that they feel they are able to adopt and modify other practices where necessary.
- **Dissemination of findings:** The TIPs findings and the recipes were disseminated to Kitui county government targeting agriculture extension officers and health workers. This was done with the aim to use the content and lessons learned in other government and partner funded projects.
- **Strengthening local extension systems:** The project strengthened sustainability of its activities through training and work with county agriculture and health staff as well as community-based facilitators. The county staff were able to reinforce and continually influence nutrition practices. As of 2021, some of the facilitators are still interacting with the households and following up with them.
- **Kitchen garden integration:** Households were trained on water efficient kitchen garden technologies including vertical gardens, sunken and moist beds. This adds value to TIPs activities, as the households are able to have a local and reliable source of vegetable for household consumption.
- **Nutrition champions:** In order to strengthen the local leadership's commitment to uphold maternal, infant and young child feeding (MIYCF), communities could identify MIYCF champions amongst the community leaders who would assist the communities to uphold the good nutrition practices.

## The implications of COVID-19

The TIPs project was implemented before the COVID-19 pandemic reached Kenya. However, given that the project used sustainable approaches to improve child feeding, it can be said to have contributed to healthy eating and thus potentially supported individual's immune systems. The TIPs implementers have continued sensitizing households on healthy diets. To support this initiative, FAO shared with the implementers the *National guidelines for sustaining healthy eating during COVID-19* to ensure contextualization of messages.

## Replicability and upscaling

The implementation of TIPs in Kenya derived from lessons linked to tools and implementation model of FAO projects in Cambodia and Malawi. FAO in Malawi implemented TIPs activities with an aim to explore locally appropriate solutions to Infant and Young Child Feeding Practices in Kasungu and Mzimba districts. Likewise, FAO in Cambodia implemented TIPs activities between 2010 and 2015.

In Kenya, some challenges experienced in TIPs implementation included:

- inconsistent availability of diverse foods due to dry seasons;
- the short duration of TIPs interventions,
- caregivers needing more time for training and support; and
- the migration of some care givers due to factors including work and gender-based violence, which resulted in a few households dropping out of the intervention.

These challenges and limitations need to be taken into consideration for future programmes or projects, or when replicating this practice in similar contexts.





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### Key learning

- Integration of an agribusiness component into a food production and nutrition project plays a key role in increasing farmers' incomes. This is a potential pathway for improving nutrition outcomes.
- This project has proven that TIPs can provide successful results when implemented at community level, therefore there is potential to replicate TIPs activities in future projects. However, there is need for a higher number of nutrition officers (TIPs implementers) to be able to carry out the activities at household level and a longer duration of TIPs activity implementation. Nutrition can be integrated into the different components of widely used agricultural and livelihood projects, including the selection of nutrition-sensitive (and gender-sensitive) inputs, and practical nutrition education training.
- The intervention documented in this brief focuses mainly on nutrition-sensitive actions, addressing the underlying determinants of child nutrition and development. Nutrition-specific actions address the immediate determinants of child nutrition and development and include: treatment of acute malnutrition, complementary feeding, prevention and treatment of infectious diseases. **There is a need to further strengthen collaboration between nutrition-sensitive and nutrition-specific actions, such as through the referral mechanism used in this practice, so that households that need both interventions (in order to prevent child undernutrition from recurring) are able to access them.**

## Partners

### Resource partners

United States Agency for International Development (USAID).

### Technical partners

- Food and Agriculture Organization of the United Nations (FAO)
- Government of Kenya
- County Departments of Agriculture and Health of Kitui
- United Nations World Food Programme (WFP)

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## Contact

### Nutrition and Food Systems Division (ESN)

Nutrition@fao.org  
www.fao.org/nutrition/policies-programmes/

### KORE – Knowledge Sharing Platform on Resilience

KORE@fao.org  
www.fao.org/in-action/kore/

## Bibliography

FAO. 2016. *Support to Smallholder farmers through irrigation Opportunities in the Eastern ASALs of Kenya*. Project Document.

FAO. 2019. *A Change in Diet Brings a Change in Health for Kenyan Farmers*. <http://www.fao.org/fao-stories/article/en/c/1184458/>

FAO. 2019. *Trials for improved practices (TIPS) report- Kenya. A joint report by the National Government of Kenya, Kitui county government and FAO*.

FAO. 2019. *Increasing smallholder productivity and profitability in Kenya*. Quarterly progress reports.

FAO. 2020. *Increasing smallholder productivity and profitability in Kenya*. Project highlights.

FAO. 2020. *Increasing smallholder productivity and profitability in Kenya*. Project findings and recommendations.

Kenya National Bureau of Statistics, Ministry of Health/Kenya, National AIDS Control Council, Kenya Medical Research Institute, and National Council for Population and Development of Kenya. 2015. *Kenya Demographic and Health Survey 2014*. Rockville, MD, USA. Available at <http://dhsprogram.com/pubs/pdf/FR308/FR308.pdf>.

Republic of Kenya. 2010. *Agricultural Sector Development Strategy 2010-2020* <http://extwprlegs1.fao.org/docs/pdf/ken140935.pdf>

Kenya Food Security Steering Group (KFSSG). *Kitui county 2019 long rains food and nutrition security assessment report*. 2019. Available at <https://www.ndma.go.ke/index.php/resource-center/send/68-2019/5288-kitui-lra-2019>

Follow up Interview notes.



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