# How to do

## Integrated homestead food production (IHFP)

IFAD
Investing in rural people

**Food security and nutrition**

**How To Do Notes** are prepared by the IFAD **Policy and Technical Advisory Division** and provide practical suggestions and guidelines for country programme managers, project design teams and implementing partners to help them design and implement programmes and projects.

They present technical and practical aspects of specific approaches, methodologies, models and project components that have been tested and can be recommended for implementation and scaling up, including best practices and case studies that can be used as models in their particular thematic areas.

**How To Do Notes** provide tools for project design based on best practices collected at the field level. They guide teams on how to implement specific recommendations of IFAD's operational policies, standard project requirements and financing tools.

The **How To Do Notes** are "living" documents and will be updated periodically based on new experiences and feedback. If you have any comments or suggestions, please contact the originators.

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# Acronyms

| | |
|---|---|
| BCC | behaviour change communication |
| FAO | Food and Agriculture Organization of the United Nations |
| FFS | farmer field school |
| HKI | Helen Keller International |
| HTDN | How To Do Note |
| IHFP | integrated household food production |
| M&E | monitoring and evaluation |
| NGO | non-governmental organization |
| PDR | project design report |
| PMU | project management unit |
| PNPM | National Program for Community Empowerment (Indonesia) |
| SHG | self-help group |
| SWOT | strengths, weaknesses, opportunities and threats |
| ToT | training of trainers |
| UNICEF | United Nations Children's Fund |
| WFP | World Food Programme |

# Introduction

Over the past years, the International Fund for Agricultural Development (IFAD) has been increasingly proactive in enabling smallholder farmers across the developing world to increase production and productivity, while concurrently enhancing their access to markets and integration into the value chains. However, experience shows that productivity and income increases do not automatically translate into improved nutritional status, especially among women, young people and children. Around three quarters of undernourished people live in rural areas of developing countries and are those producing most of the food. Addressing nutritional issues is, therefore, crucial to combating rural poverty, feeding the world in a sustainable manner and ensuring a healthier future for the younger generations. Integrated homestead food production (IHFP) is one of the most promising pro-poor strategies to address undernutrition and specific nutritional deficits such as micronutrient deficiencies (Box 1). In a number of programmes in rural areas of all the developing regions, homestead gardens have been providing access to nutritious fresh food to households with relatively limited economic and productive assets. More recently, smallholder fish-farming has also become an important source of animal protein for poor households in rural areas.

**Box 1: IHFP – what is it about?**

IHFP refers to a food production system whereby homestead gardening is integrated with backyard livestock, beehives and/or fish ponds, and complemented with nutrition education. Whether they are known as mixed, backyard, kitchen, farmyard, compound or homestead gardens, these are small-scale cultivated plots of land that are often adjacent to the house. They are used mainly for the cultivation of vegetables and fruit trees, and often integrate one or two dairy cattle or buffaloes and small animals such as poultry, pigs, goats, sheep, rabbits and guinea pigs. Within the system, the fish pond provides water for the garden and nutrient-rich mud, the garden and home waste feeds the animals and fish, and animal manure feeds the garden and small water plants that fish feed on.

The objective of IHFP is an increased and improved home consumption of nutritious food.

Produce from IHFP complements the diet but does not cover the entire food/nutrient requirement. Staple foods such as root crops, tubers and grains need more space than a backyard food production system is usually able to provide.

Only surplus should be marketed.

Experience worldwide confirms that while IHFP alone will not eliminate micronutrient deficiencies, it can be an effective approach to increasing year-round availability of diversified home-grown foods and to supplementing the diet with vitamin-rich vegetables and fruits, energy-rich staples and animal sourced proteins. In order to achieve these outcomes, IHFP should be implemented within a comprehensive package of interventions, namely:
(i) gender-sensitive provision of technical inputs and training on food production techniques; (ii) nutrition information and education on a diversified and nutritious diet, as well as on food preparation and storage, targeting women in particular, but without excluding men; and (iii) promotion of gender equality, so that women can access and control productive and financial assets, and take decisions in terms of food production, intra-household distribution and purchase.

This How To Do Note (HTDN) provides guidance on designing and implementing interventions that promote IHFP as a means to complement poor rural households' food security through the provision of supplementary nutritious food in the context of rural development projects. It is specifically conceived to meet the requirements of IFAD-supported operations. The main targeted audience is IFAD country programme managers, country presence officers, project design and implementation support mission teams and project management units (PMUs).

The HTDN draws on best practices, lessons learned, and existing manuals and toolkits from within IFAD-supported operations, as well as other sources. It does not attempt to be exhaustive and is purposely kept focused in order to be as operational and user-friendly as possible. It also provides references to additional and complementary resource materials that could be consulted during implementation in order to address various specificities, including: project focus; agroecological and socio-economic contexts; and rural communities' livelihoods, assets and capabilities.

IHFP can also be carried out on common land but this toolkit deals with production on land that is individually managed by the rural household. Although farming practices and potential benefits associated with IHFP are the same in the two models, the institutional mechanisms for land access, management and labour division may be different and have implications for project design. Therefore, IHFP on common land is not specifically addressed in the present HTDN.

# Overview of lessons from past experiences

In order to be successful, IHFP activities should be promoted only when minimum requirements are met – e.g. access to land and water, as well as labour availability – and taking into consideration cultural food preferences and taboos.

IHFP can enhance a household's food availability, accessibility and diversity, primarily through increased production of food grown on the homesteads, but in many cases also through the income generated from surplus[1] sales, which is largely used to purchase food – as witnessed in the programme implemented by Helen Keller International (HKI) in South-East Asia and by the WorldFish Center in Bangladesh, Mali and Mexico.

To effectively address nutrition, IHFP activities need to include nutrition education and communication activities that promote behaviour change. Nutrition education[2] and sensitization tailored to the context is key to ensuring that increased food production translates into a more nutritious and diversified diet, especially among people with special nutritional requirements, such as children and pregnant and lactating women. Targeting primarily women for such training is one of the most effective ways to ensure that children, young people (especially girls) and the family as a whole receive adequate food. However, in contexts where women face restrictions in mobility and thus it is the men who buy food, nutrition sessions should also target male household members. In addition, mobilizing village-based female promoters of nutrition education could help in reaching out to more women. Mobilization and capacity-building of community trainers or facilitators have proven effective in enhancing outreach as well as the acceptability and sustainability of the interventions.

Assisting the communities to form village-based groups is often the best targeting approach to ensure full participation and overcome key constraints while building social capital. This has been demonstrated in Lesotho, where community groups were formed to ensure people's effective participation and project ownership; in Indonesia's National Program for Community Empowerment [Program Nasional Pemberdayaan Masyarakat] (PNPM Mandiri) supported by IFAD, in which women's groups provided a platform for labour-sharing; and in Afghanistan, where IFAD supports women's village poultry producer groups as a mechanism for training delivery and women's empowerment.

IHFP is not only a women-friendly activity but is also conducive to women's empowerment both economically and in terms of decision-making within the household, given that most of IHFP-related activities are managed and controlled by women. This impact was noted in most of the projects reviewed, including those in South-East Asia, Afghanistan, Bangladesh, Burkina Faso, The Gambia and Mali. However, IHFP projects should avoid increasing women's workloads, as occured in Bangladesh and Mali, and ensure that adequate measures for targeting women are identified at design stage.

In order to be sustainable, IHFP interventions should envisage a viable mechanism for input supply and regular technical support. For this purpose, linkages should be established with local service providers, including veterinary field units and poultry service suppliers, health and agriculture centres, and agro-dealers and government extension officers.

Successful IHFP activities have often led to the spontaneous replication of approaches and practices among untargeted households or communities.

[1] A surplus production is a production that exceeds consumption needs at the household level and cannot be utilized in the household.
[2] http://en.wikipedia.org/wiki/Society_for_Nutrition_Education

To read more about lessons learned and about specific case studies, refer to the Lessons Learned document (http://www.ifad.org/knotes/nutrition/index.htm).

# Guiding steps for project design

Practical steps to guide project teams on how to incorporate IHFP into project design (summarized in Figure 1) are described in the following sections.


**Figure 1: Steps in integrated homestead food production design**

## Step 1 – Assess household nutrition, food security and IHFP system

At project design and subsequent start-up, basic nutritional and food security assessments should be carried out to identify nutritional habits and deficiencies among the target communities. These assessments should be complemented by secondary data (e.g. UNICEF and WFP reports, available in-country statistics). This exercise should not aim to carry out a comprehensive or representative survey but rather a rapid collection of data through interactions with as many households and community groups as feasible during the design missions. Indicative guiding questions are provided below:[3.]

**Table 1: Indicative questions for assessing nutrition, food security and IHFP systems**

| | |
|---|---|
| **Household's nutrition and food security** | ▪ During the last 7 days, how often did you eat the following (information should be disaggregated by children and women):<br>a) grains (cereals, rice, bread, pasta)<br>b) roots and/or tubers (e.g. potatoes, yams)<br>c) vegetables/greens<br>d) fruits<br>e) dairy products and/or eggs<br>f) meat and/or fish/seafood<br>g) nuts and/or legumes (or derivates, e.g. tofu)<br>▪ Are there periods when the household suffers from food shortages? If yes, when?<br>▪ How many meals are eaten in a day (disaggregated by women and children)<br>▪ Are any members of the household malnourished (especially, are there cases of undernutrition and micronutrient inadequacy among women and children)? Are any of them receiving medical treatment or supplements?<br>▪ Are household members, especially women, informed about nutrition issues and the importance of a diversified/nutritious diet? Have they ever participated in any nutrition training courses? |

[3] These questions are not meant to be directly asked to the household members but are rather indicative of the type of information the designers should collect during assessments. They may need to be tailored to specific projects or contexts and should also take seasonality into account.

| | |
|---|---|
| **Household's present (homestead) production and purchase** | ▪ What types of vegetables/fruits/livestock and household-based fish are produced at the household level, if any? In what quantity?<br>▪ Who in the household makes decisions about what to produce?<br>▪ What kind of challenges does the current homestead production (if any) encounter?<br>▪ In what ways are the household members engaged (share responsibility) in production?<br>▪ How much and what type of food is purchased? How much of the household's income is spent to purchase vegetables, fruits, livestock and/or fish products? Who generally makes decisions about buying food and inputs (men or women)?<br>▪ Does the household sell any surplus from vegetables, fruits, livestock and fish ponds? If so, who in the family makes decisions about whether to sell production and who makes decisions about how to spend the money earned? |

The designers should also conduct a preliminary assessment to determine whether it would be appropriate to promote IHFP activities as a means to supplement the households' diet and enhance their access to nutritious foods. This assessment will be completed and tailored to the specific communities and households during implementation. It should consider the feasibility of establishing homestead gardens and/or improving existing ones in the target area, taking into account the agroecological conditions and households' capabilities, assets (e.g. land, water and labour force) and access to inputs and services. The designers should also identify the constraints to IHFP and the measures required to overcome them. It would also be advisable to organize visits to sites with similar contexts where IHFP is already practised, in order to learn from the experiences of non-governmental organizations (NGOs) and others, and assess whether the project could replicate them. The following questions provide guidance for a strengths, weaknesses, opportunities and threats (SWOT) analysis.[4]

### Table 2: Opportunities and constraining factors for IHFP

| | |
|---|---|
| **Land and soil** | ▪ Does the target group (by gender) have access to suitable land (size, quality, secure rights, type, location) for the intented food production (crop, fish, livestock)? |
| **Water** | ▪ Is water available all year-round for sustainable IHFP activities?<br>▪ Would increased demand for water for IHFP reduce the amount of water available for the household or other families?<br>▪ Would the project need to put in place/improve water supply through water harvesting/conservation practices or address risks of flooding/waterlogging?<br>▪ How much would it cost to maintain these practices and structures? How much of that cost can households/groups afford at present? Are there skilled persons to do more technical/specialized maintenance? |
| **Labour** | ▪ Does the household possess sufficient labour capacity and time to regularly engage in IHFP, especially considering the existing workload of women?<br>▪ Are there disabled, old, sick or HIV/AIDS-affected persons who cannot work or would require tailored measures to engage in IHFP?<br>▪ Are the household members experienced farmers? Is their know-how adequate?<br>▪ What is the role of the women and children in IHFP? Do the women make decisions about or have control over activities, crops/livestock to grow/raise, use of the produce and any income earned? Would certain activities put additional burden on women?<br>▪ Does the household have the necessary tools/equipment for IHFP?<br>▪ Does the household have the required skills for all IHFP activities? If not, what additional training is necessary? |
| **Inputs and services** | ▪ Does the target group have access to financial resources needed to carry out the activities?<br>▪ Do they have access to training, extension and vaccination services?<br>▪ Do they have sustainable and timely access to quality inputs (crop and fish seeds, planting materials, piglets, chicks, fish juveniles or breeders, drip irrigation, roof rainwater harvesting, etc.)?<br>▪ Are community members organized in interest groups to access inputs, resources and services, or to share labour? |
| **Agroecological conditions** | ▪ Is there food production already in place which could be enhanced to address nutritional needs at household level? |

[4] SWOT analysis is an analytical method used to identify and categorize external threats and internal opportunities in a particular arena by matching external possibilities with internal capabilities. Description on how to conduct SWOT can be found at: http://forlearn.jrc.ec.europa.eu/guide/4_methodology/meth_swot-analysis.htm and http://www.ifad.org/english/institutions/field.pdf.

**Links to more specific and complementary questions for assessments under step 1:**

- Home gardening (FAO training package, *Improving Nutrition through Home Gardening*): http://www.fao.org/ag/agn/nutrition/household_gardens_en.stm
- South-East Asia: sessions 7 and 8 (http://bit.ly/1fqQtbl); Africa: sessions 4, 7 (checklist 2) and 8 (checklist 3); Latin America: sessions 7 and 8
- WorldFish Center, *Training Manual on Household Based Pond Aquaculture, Homestead Gardening and Nutrition Awareness*: http://bit.ly/1fPX2nO
- WorldFish Center, *Aquaculture for the Poor in Cambodia – Lessons learned*: http://bit.ly/1aHhQQE
- FAO, *Small Ponds make a Big Difference*: http://bit.ly/1iAgOGy
- FAO, *Sociocultural considerations when introducing a new integrated agriculture-aquaculture technology*: http://bit.ly/1geFguZ

## Step 2 – Define project sites, target group and targeting approach

The designers will need to identify the IHFP project sites, target group and modalities for engagement with the target communities, in line with IFAD's policies (particularly those on targeting, gender and indigenous people).[5]

**Project area.** Identify project sites in consultation with relevant government departments and other mission members using secondary data and based on the following indicative criteria:

(i) poverty and vulnerability to food insecurity and malnutrition, especially among children

(ii) interest of local communities to engage in IHFP

(iii) commitment among local government and community leaders

(iv) lack of other ongoing interventions related to IHFP

(v) coverage by programmes addressing other technical/thematic areas that can complement and maximize the impact of IHFP interventions (e.g. water, infrastructure, community development, women's empowerment).

**Target group.** It should be selected on the basis of: (i) willingness to participate in the project; (ii) poverty, food insecurity/undernutrition (especially among children and pregnant and lactating women) and gender considerations; and (iii) eligibility under the previous two categories and current engagement in IHFP, but needing support to improve/expand IHFP techniques. Capacity-building needs assessment should guide the design of trainings and education programmes.

Households will also need to meet the minimum requirements in terms of land, water and labour availability; otherwise, supporting interventions should be initiated to overcome such constraints (see step 4). Designers will also need to: (i) specifically target women and households with children; (ii) understand the role of women and men in IHFP; and (iii) consider particular challenges for women in terms of additional workload, reduced caring capacity and access to inputs and services.

**Targeting approach.** Define differentiated mechanisms for engagement with target households depending on: (i) whether they already engage in IHFP; and (ii) vulnerability (e.g. women-headed households, HIV/AIDS-affected households). The designers should also define the approach for engagement with the communities, e.g. household-based or group-based (self-help groups [SHGs], cooperatives).

**Link to complementary resource materials:** http://www.ifad.org/knotes/household/hh_teaser.pdf

## Step 3 – Define IHFP activities

Before outlining specific project activities, the designers will need to identify: (i) what are the nutritional gaps to be addressed with IHFP; (ii) what types of IHFP systems are more suitable to promote given local agroecological, socio-economic and cultural conditions; (iii) what are the appropriate management practices for optimal crop/livestock/fish pond integration; and (iv) what is the knowledge gap of the target group. This will provide a framework for the implementers, who will then adjust it on the basis of the specific local situation. A certain degree of flexibility in the design is therefore

[5] IFAD policies can be found at the following link: http://www.ifad.org/operations/policy/policydocs.htm

recommended. Field experience indicates that it is advisable to start with vegetable gardening and then introduce backyard livestock and/or fish ponds, depending on the households' willingness, needs, capacities and asset/labour availability. However, there is no definite rule about which one of these activities should come first. Most commonly, a household would already be practicing one or two production activities (gardening, small livestock and/or fish-farming) and the next step would be to decide on a second and/or third activity to integrate with the existing ones.

The designers should also review any existing manual, toolkit, handbook and training materials (see the reference section) used by local service providers or extension workers. They should recommend whether these materials are adequate for project implementation or whether the production of new manuals should be financed.

Specific steps for each IHFP component are provided below.

### Garden component

- **Select the most appropriate crops to grow**. The crops should be selected primarily based on the nutritional gaps to be addressed and the corresponding nutritional value (see Table 3 for information), while taking into consideration local food preferences and cultural habits and taboos, garden size and type of land/soil, and availability of water and local seeds. If feasible, it would be advisable to grow a minimum of four types of crops in order to provide different micronutrients and also to reduce the risk of pests.

**Table 3: Nutritional gaps and sources of nutrients**

| Nutritional gap | Sources of nutrients (examples) | Type of IHFP system |
|---|---|---|
| Vitamin A | Dark green leafy vegetables, colour-rich vegetables and fruits (carrots, mangoes, pawpaw, orange-fleshed sweet potatoes, capsicum, squash), liver | Homestead garden, fish pond |
| Iron | Dark green leafy vegetables, beans and pulses, nuts, (red) meat | Homestead garden, small livestock |
| Vitamin C | Amaranth, squash, cabbage, kale, capsicum, onions, citrus fruits | Homestead garden, orchard |
| Calcium | Amaranth, kale, mustard, spinach, beans, turnip greens, soybeans, dairy products, fish | Homestead garden, fish pond, small livestock |
| Iodine | Iodized salt, fish liver | Fish pond |
| Protein | Fish, meat, eggs, dairy products, beans, grams, soybeans and cowpeas | Homestead garden, fish pond, small livestock |

Especially in challenging agroecological environments, the preferred crops are those requiring limited water, space and chemical fertilizers; posing minimal competition for soil nutrients; easy to grow and manage; and pest- and disease-resistant. Indigenous varieties that are more likely to be technically feasible and culturally acceptable, different varieties that could help reduce crop failure and multi-purpose crops are also better choices.

- **Identify the most suitable garden model.** On the basis of land and labour availability, the agroecological context and the socio-economic situation of the target group, different types of gardens can be chosen and more than one type could be established in each household (for details, see Table 4). Appropriate fencing is essential, as an absence of such is one of the main reasons for failures in IHFP systems.
- **Identify appropriate modalities for setting up demonstration and learning sites** (e.g. how many in a given area vis-à-vis the target households) and criteria for identifying households that will host such sites (e.g. households with experienced farmers and possibly well-developed IHFP activities). These households should not be chosen among the village elite groups or the poorest community members, in order not to create a view among local people that IHFP is either an elitist or a low-status activity. Farmers managing demonstration sites could also produce planting materials (such as seeds and

seedlings). Tours and exchange visits among villages/households should also be envisaged in the design.

- **Recommend basic good management practices for garden, crop and soil management**. Based on the insights gained through field visits and reviews of existing context-specific literature, the designers should make some basic and context-specific recommendations on good practices in IHFP system management that could be adopted during implementation.

**Table 4: Some typologies of gardens and their different characteristics, opportunities and challenges**[6]

| Type of garden[7] | Main characteristics | Suitable agroeco-logical conditions | Comparative advantages | Disadvantages/ constraints | Suitable crops |
|---|---|---|---|---|---|
| **Trench garden**  | ▪ The most common homestead garden<br>▪ Developed horizontally | Dry and wet | ▪ Low-cost design<br>▪ Labour-saving<br>▪ Moisture retention in arid or semi-arid climate<br>▪ Sunken beds can trap water<br>▪ Raised beds can drain out rain<br>▪ Suited to small/medium-size crops | Requires more space than keyhole garden | Spinach, carrot, onion, radish, garlic, rape, cabbage, tomato, pepper, chilly, pea, potato, eggplant, bean, herbs and squash |
| **Keyhole garden**  | Developed vertically to minimize space and be more conveniently managed by the disabled and physically weak | Rocky areas, shallow arid or compacted soils | ▪ Suited to most vulnerable people<br>▪ Low-cost design<br>▪ Labour-saving<br>▪ Moisture retention in arid or semi-arid climate<br>▪ High productivity even in cold and dry winter<br>▪ Easy use of household's wastewater | ▪ Initially labour-intensive<br>▪ Requires more materials compared to trench gardens | Carrot, onion, radish, garlic, spinach, lettuce, rape, herbs |
| **Floating garden**  | Designed to help farmers adapt to flooding | Flood-prone and densely populated river areas | ▪ Low-cost design<br>▪ Food crops can be grown on flooded land, ponds, canals and other water courses | ▪ Site distance from households<br>▪ Unavailability of raw materials to make the raft<br>▪ Raft may need to be rebuilt every growing season | Leafy vegetables, okra (lady's finger), gourd, brinjal (aubergine), pumpkin, onion |
| **Microgarden**  | Designed for landless and farmers with very limited land and water | Dry and wet | ▪ Low-cost design<br>▪ Targeted to landless and near-landless<br>▪ Can easily be built and moved | | Lettuce, basil, mint, tomato, beans, onion, garlic, potato, stem celery, hot and sweet pepper, carrot, cucumber, radish, cabbage, cauliflower, broccoli, spinach, eggplant, strawberry, squash |

- **Ensure building of protective fences.** Lack or inadequacy of protective fences is a major cause of failure of IHFP systems. Small livestock kept in the garden and other animals such as birds or rodents

[6] These models do not attempt to be exhaustive and their names may be different. They were chosen due to their suitability for different agroecological, socio-economic and resource conditions.
[7] Photo credits: trench and keyhole garden (Lesotho) and microgarden (Bolivia [Plurinational State of]), A. Rota (IFAD); floating garden (Bangladesh), Practical Action.

can destroy the crops. Appropriate fences should be built to keep out all potential predators. Live fencing is the simplest and most affordable option, as it uses locally available materials that in some cases could even provide useful by-products for household consumption or sale, thus maximizing the return on investment in the system. Another way to address the issue is to build sheds and animal houses within the garden.

**Additional resources on protective fences:** http://bit.ly/1klt5ld

- **Crop diversification/multicropping**. Growing various crops from different families is key to ensuring/promoting dietary diversity (Box 2). There are a number of other benefits associated with crop diversification and multicropping. Alternating crops (e.g. leafy, root, tuber, fruit crops) each season (**crop rotation**), with periods of land fallow, and growing different crops next to one another (**intercropping**) help to reduce the risk of pests; make efficient use of soil nutrients, as different crops take a different amount of nutrients from the soil; improve plant growth and resilience; and reduce competition for (scarce) resources (land, water).

  **Additional resources:**
  FAO, *Improving Nutrition through Home Gardening* (http://www.fao.org/docrep/003/x3996e/x3996e00.htm)
  - Crop management
  - Multiple cropping
  - Multi-layer cropping

**Box 2: Examples of crop diversification**

- Rotating beans or peas (which put nitrogen back into the soil) with maize (which is a heavy consumer of nitrogen)
- Growing corn after legumes, and potatoes after corn
- Alternating or intercropping deep-rooted crops with shallow-rooted crops (e.g. maize with sorghum)
- Intercropping tall plants with short ones (e.g. maize with cabbage, broccoli with spinach/lettuce, fruit trees with vegetables); climbing plants with ground plants (e.g. passion fruit, beans or corn with lettuce, onions, carrots or squash); plants with broad leaves with plants with narrow leaves (e.g. cabbage with carrots); and tree crops (e.g. coconut, citrus and cinnamon) with annual food crops (e.g. groundnuts, maize, cassava) or vegetables.

- **Weeding.** Weeds growing between garden rows compete with crops for nutrients, water and space, and take away labour from other activities. Weeds should be: (i) prevented, e.g. by filling in the space between plants with mulch or ground cover, or covering all the soil with productive crops; (ii) regularly removed after planting and periodically throughout the growing season, especially before flowering; and (iii) used productively, e.g. to make liquid manure, material for mulch, compost or animal feed.

- **Pest control.** As mentioned above, proper crop management (e.g. through intercropping and/or crop rotation) and weeding are among the main ways to control pests and diseases. Other good practices that should be followed include: (i) keeping the garden clean; (ii) growing crops during the appropriate season and, to the extent possible, under adequate soil, water and light conditions; (iii) ensuring that there is sufficient inter-/intra-plant space for proper ventilation; (iv) regularly watering the crops (but avoiding over-watering and waterlogging) and protecting them from strong wind; (v) removing diseased parts of the plant; and (vi) using organic pesticides (Box 3).

  **Additional resources:**
  FAO, *Improving Nutrition through Home Gardening* (http://www.fao.org/docrep/003/x3996e/x3996e00.htm)
  - Weed and pest management

**Box 3: Examples of organic pesticides**

- Sprinkling ash around the base of young plants and new leaves or over insects
- Using home-made pest sprays produced from neem fruit, tobacco, chili or soap, garlic or onion and water to deter chewing and sucking insects
- Growing garlic, marigold and/or lemon grass, which naturally repel many insects.

- **Soil conservation and fertility.** Soil should be protected from erosion by using trees, shrubs, grasses and groundcover crops (Box 4). Organic matter helps to add nutrients, retain moisture and neutralize acidity. This can also be done through mulching and composting, as well as green and animal manuring. After harvest or weeding, crop stocks and weeds can be left in the field as mulch. Composting is a cheap alternative to the use of chemical fertilizers, converting kitchen waste and other organic matter into nutrients for the soil. Compost should not be dried out and should be used in the early evening when it is cool.

  Manure should be completely dry and flaky before use. Wet manure attracts insects and can damage crops.

**Box 4: Improving garden soil fertility in Ghana**

According to a study conducted in the Nandom traditional area of the Upper West Region, local communities use compost in three ways to maintain garden soil fertility: continuous dumping of domestic waste in the home garden; dumping of domestic waste and animal excreta during the dry season to make compost; use of waste from the harvest, leaving it in the garden to decompose. These practices resulted in improved crop yields over the years, in savings from purchasing of costly chemical fertilizers and in the socio-economic and environmental sustainability of home gardens.

Source: E. Bagson, A.N. Beyuo (2012)

**Additional resources**:
FAO, *Improving Nutrition through Home Gardening* (http://www.fao.org/docrep/003/x3996e/x3996e00.htm)
- Soil management
- Soil improvement, composting, manuring

## Livestock component

- **Select the livestock species.** The selection of livestock species mainly depends on: (i) the interest of targeted people; (ii) the type of livestock traditionally kept by households; (iii) the available quantity and quality of feed resources; and (iv) socio-cultural aspects (e.g. religious restrictions). Non-compliance with these basic criteria often results in project failures (Box 5).

**Box 5: Rapid assessment of backyard livestock**

- What is the current level of backyard livestock production in the village or area?
- What are the main constraints to production?
- What are the particular challenges for female farmers?
- What options are available to reduce the impact of the identified constraints?
- What is the best way to promote the chosen options?

Small livestock species are generally more suitable for IHPF systems because they: (i) contribute animal-sourced protein to the diet (especially for children below 6 months of age); (ii) can be kept by landless households; (iii) reproduce fast; (iv) efficiently transform roughages, shrubs, kitchen waste, etc., into highly valuable food; (v) produce manure, which is often the only input for crop production; (vi) do not require big start-up capital; (vii) are easily sold or bartered; and (viii) are highly mobile in case of crisis/disaster. However, some resource-poor households may choose to keep one or two dairy cattle or buffaloes, mostly for family milk consumption and production of manure for food crop cultivation. On the other hand, livestock production occasionally fails due to a lack of access to services (e.g. veterinary) and resources, especially by women.

- **Maintain livestock health and security**. There are four technical elements that project design needs to address when launching new IHFP-related livestock activities or improving existing ones in order to achieve increased productivity:

  - **Mitigate mortality from diseases.** Mortality reduction, especially in young animals, results in a significant increase in livestock productivity. This can be achieved through adequate prophylaxis (e.g. vaccination) and application of basic hygiene/biosecurity practices (see step 5 for service providers' capacity and training need assessments).

- **Mitigate losses from predation/accidents/theft**. Reduction in losses will also significantly increase livestock productivity. Housing for backyard livestock (e.g. piggeries, chicken coops, goat pens, etc.) will reduce the risk of theft and predation and – through better management – enhance the control of diseases and facilitate the collection of manure. It is advisable to use local materials (wood, bamboo, straw, etc.) for building livestock shelters. Project design may provide farmers with cement, nails, wire, etc., as a form of incentive. Manpower for construction must be provided by farmers in order to enhance their sense of ownership. Training for building appropriate livestock housing should also be arranged. The most important requirements of housing facilities are space, light, hygiene and protection (from predators, vermin and weather). These requirements may vary depending on whether the animals are constantly enclosed or housed only at night. In turn, the decision to keep the livestock constantly enclosed or housed only at night mainly depends on: (i) the need to allow livestock to roam/graze freely for feeding purposes; (ii) the need to protect food crops, especially during the cultivation period; and (iii) the ability of the targeted communities to afford sheds or fences.


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- **Improve feeding practices**. The provision of a nurtitionally balanced feed contributes towards the expression of genetic potential in livestock and increases their resistance against diseases, thus enhancing productivity. Before deciding how many animals a household can keep, it is advisable to estimate its capacity to provide sufficient feed from crop/fish by-products, kitchen residues, available free natural resources (natural grass, shrubs, trees, seeds, as well as insects, snails, etc.). It is important to promote livestock feeding practices that do not compete with the nutritional requirements of the family for scarce food resources. Training should be provided, especially to women, on how to properly mix various available feedstuffs in order to prepare nutritionally balanced feed. A common mistake made by project designers is to recommend that resource-poor households in remote areas keep “exotic,” “improved,” or “specialized” breeds as a means for increasing productivity (see also the following paragraph). Such improved breeds require high quality (usually commercial) feed, which is costly and not readily available in remote areas. New feeding technologies that add substantial workload to farmers, or which require feed components not readily available at a reasonable distance and/or at an affordable cost, are commonly abandoned after a project

ends. The use of commercial feed for IHFP should be considered only if: (i) the project is designed to make the transition to market-oriented production; (ii) there is an opportunity for farmers to access a regular supply of feed/inputs at low transaction costs; and (iii) it is economically viable. An aspect often neglected is the daily provision of clean and freshwater (see step 4 on water issues), especially during dry periods or in dry areas. This can have various implications: for instance, milk production can be lower than expected due to insufficient water intake.

- **Improve breeding practices**. Local or "native" breeds kept under good management conditions respond well to the purposes of IHFP and to the needs/capacity of resource-poor households located in remote areas. Such breeds are often dismissed as "low-productivity breeds." They are, however, well adapted to local conditions and practices. Their products generally have a higher market value because they have better organoleptic characteristics, are considered as "healthier," and enter in the preparation of traditional dishes. Project design should include appropriate training and capacity-building aimed at improving management practices (see step 6 on training). Development projects often promote the introduction of specialized breeds (see above). In order to live and produce, such breeds require commercial feed, appropriate housing facilities and adequate management and health practices. Hence, such breeds should be introduced only in environments with easy and cost-effective access to services and urban/large rural markets where the necessary inputs could be purchased and products sold. In rural villages with access to roads and in close proximity to periodical rural markets, the use of crossbreeds should be considered, as these animals are both more resistant than specialized breeds and have a better productivity than local breeds.

**Additional resources:**

- IFAD, *Decision Tools for Family Poultry Development*: http://www.fao.org/3/a-i3542e.pdf
- FAO, *Small-scale Poultry Production*: http://bit.ly/1bddPnV
- FAO, *Integrated Agriculture-Aquaculture*: Integrated backyard systems: http://www.fao.org/docrep/005/y1187e/y1187e00.HTM
- FAO, *The Rabbit - Husbandry, Health and Production*: http://www.fao.org/docrep/t1690e/t1690e00.HTM
- FAO, *Utilization of Fruit and Vegetable Wastes as Livestock Feed and as Substrates for Generation of other Value-added Products*: http://bit.ly/1aHCpwx

## Fish pond component

Fish has a special nutritional importance as a source of omega-3 fatty acids, which are important for optimal brain and neural system development in children. Consumption of fish is particularly important during pregnancy and the first two years of life (the 1,000-day window of opportunity). Fish consumption also has health benefits for the adult population, as it lowers the risk of coronary heart disease.

In addition, fish is an excellent source of protein and other nutrients that it contains in significant amounts, including micronutrients such as vitamins and minerals. In this regard, there can be significant variations between species and between different parts of the fish. The small-sized species, consumed whole with heads and bones, are particularly a very rich source of many essential minerals such as iodine, selenium, zinc, iron, calcium, phosphorus and potassium, as well as vitamins such as A and D and several vitamins from the B group.

- **Assess feasibility/suitability of integrating household-based aquaculture.** Where communities or households do not have fish ponds, the project designers will need to complement the preliminary assessments (see step 1) with assessments that focus on the feasibility/suitability of integrating an aquaculture component in the local farming system, including as a scaling-up activity. Through such assessments, designers should seek to understand whether the households' available resources (labour, water, land, initial capital, etc.) are sufficient for an additional component. Water availability is particularly important and will be the first consideration in any fish-farming initiative. Once the latter factor is established, then other factors can be considered and addressed if found problematic. For example, where is the the best site for constructing a pond (ensuring that the soil type is such that it can hold water, e.g. clay/loam but not sandy)? What are the fish culture systems in use? How much is the distance between the pond and the house (close to the house will reduce risk of theft, but not too close to latrine areas to prevent contamination)? Is the household's know-how adequate to

successfully manage fish ponds or are service providers available? Is the inclusion of aquaculture socially and culturally acceptable? Would it put additional burden on women?

- **Assess the best fish pond models to promote.** The designers should identify the best model to promote on the basis of the following main criteria: land and labour availability, the frequency and magnitude of floods in the target area and availability of equipment. They will also have to develop targeting criteria for the implementers, such as willingness to set aside land for a fish pond (for households that do not yet engage in this activity), willingness to invest in building a new pond or improve an existing one and pond water retention.

- **Select the fish species**. Adequate fish composition and stocking density should be identified based on the type of ponds to be promoted. Selecting only one species may be unprofitable and risky. Key factors to be considered in this regard are the availability of fish seed for a particular species and the skills of a household to propagate it. In some cases, there are restrictions on which species can be introduced in particular areas in order to avoid negative impacts on native species.The main criteria for the selection of culture species should include: suitability for cultivation in given conditions (household ponds are often small, with low oxygen and relatively high temperature); suitability of available feeds; low risk of disease; fast growth; market demand for surplus fish production (although, as a priority, the fish should enrich the dietary diversity at household level, surplus might be sold); low risk to local ecosystem (i.e. avoid invasive species); suitability for polyculture; and availability of fish seed/fingerlings. It is important to use native species and breeds developed by local or national programmes wherever possible.

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- **Determine the pond layout.** The pond layout and depth depend on the culture species and on the size and shape of the area, which in turn determines the number and sizes of ponds and the position of the water canals and gates. A fish farm is considered properly planned if all water control structures, canals and different pond compartments mutually complement one another.

- **Recommend basic good pond management practices and techniques.** Complemented with recommendations related to the specific local situation and farming system, the following basic practices should be followed during implementation.

    - **Stocking.** The stocking density depends on the species, culture and marketing strategy (lower densities will produce fewer but larger fish), size of pond, size of fingerlings, availability of supplementary feed, aeration equipment and freshwater supply, among other factors. Production will improve if a good balance of different species is stocked which optimally utilizes the varied kinds of food available in the pond. For example, tilapia, a commonly stocked fish, breeds extremely quickly, which can become a problem as higher density reduces growth rates. This can be controlled by stocking only male tilapia or stocking a small percentage of female tilapia, or by polyculture with a carnivorous species such as African catfish which will feed on tilapia fingerlings.

    - **Water management**. Water in the pond should be kept at certain levels for optimal fish growth, depending on fish species. The extent to which freshwater will be required depends on the species stocked: while some species require a continuous supply of freshwater, other species thrive in plankton-rich water which takes time to build up nutrients and into which entry of new water should be minimized. Inflows, outflows and the pond water itself should be

carefully managed to minimize overflow or leakage, as even small amounts of water accumulating in puddles, or in the footprints of animals which drink from the pond, can become breeding grounds for malarial mosquitos. Ponds should be located at a distance from latrines, as contamination of ponds with human urine or excreta can spread water-borne diseases. It is also important to be aware of schistosomiasis (bilharzia), as the snails which harbour the disease live in stagnant freshwater bodies.

- **Fish feeding**. Readily available on-farm resources (livestock manure, crop by-products and kitchen waste) should be preferred as pond inputs and the selected species should be those which can feed on these resources. However, while the use of these materials minimizes input costs, fish yields are low and the potential to increase production is limited. In any case, the pond has to be seen primarily as a means to improve the animal-sourced protein intake in the household.
- **Pond maintenance**. The following should be carried out for basic pond maintenance: application of fertilizers and lime, in line with guidance from local extension agents; prevention of entry of predators, including placing nets over ponds to prevent predation by birds; monitoring of the stock for growth rate determination as a basis of feeds and water management; and regular pond upkeep and maintenance such as keeping pond water edges free of weeds.
- **Optimal integration with garden and backyard livestock**. This leads to greater overall efficiency of the IHFP system, as wastes/by-products of one component are used as inputs in another. For example, poultry or pig manure can be used to fertilize the fish pond and the vegetable garden, whereas vegetable waste can be fed to the fish and the pigs. The fish pond can contribute to crop irrigation and livestock watering in the dry season, thereby increasing the viability of year-round production. Furthermore, pond water is usually richer in nutrients than well water and also contains nitrogen-fixing blue-green algae which can improve soil fertility. After the fish harvest, nutrient-rich pond mud can be used as fertilizer or the pond can be used to grow forage and other crops.

An important consideration is the positioning of these production units. Ideally, the livestock holding unit should be situated on a higher ground in relation to the fish pond so that its waste can be washed directly into the pond. The vegetable garden can be located at a lower level which allows wastewater from the fish pond to flow into it.

**Additional resources:**

- FAO, *Small ponds make a big difference: Integrating fish with crop and livestock farming*: http://www.fao.org/docrep/003/x7156e/x7156e00.htm
- FAO, *Aquaculture Methods and Practices: A Selected Review*: http://www.fao.org/docrep/t8598e/t8598e05.htm
- FAO, *Sociocultural considerations when introducing a new integrated agriculture-aquaculture technology*: http://www.fao.org/docrep/005/y1187e/y1187e04.htm#d
- WorldFish Center, *Training Manual on Household Based Pond Aquaculture, Homestead Gardening and Nutrition Awareness*: http://pubs.iclarm.net/resource_centre/CSISA-HH-manual.pdf
- WorldFish Center, *Gender and Aquaculture: Sharing the benefits equitably* http://pubs.iclarm.net/resource_centre/WF_2832.pdf

## Nutrition education component and behaviour change communication in nutrition

Increased food availability does not automatically lead to an increased food intake or improved diet. Dietary habits and feeding patterns are usually deeply rooted and not easily changed with uniform messages. Nutrition education should always consider existing (traditional) knowledge, habits and patterns, which might be determined by cultural and religious values but also by socio-economic factors. Receiving this information and transforming it into adequate messages is a communication rather than a one-way education process.[8]

Behaviour change communication (BCC)[9] is a proven method for promoting better nutrition. Changing behaviour is usually not something which can be done in a short term. However, if habits and patterns are

[8] In this toolkit, the term nutrition education will be used, although the preferable term is nutrition communication.
[9] https://en.wikipedia.org/wiki/Behavior_Change_Communication

well understood by the nutrition promoter, a step-by-step approach can be applied. A successful approach in the context of child feeding, for example, is the "positive deviance" approach, which is based on identifying best practices within the community to emphasize on the fact that some families under the same conditions are better at managing appropriate child feeding than others. Thus, replicable elements responsible for the success are identified and promoted in the community at large, contrary to the approach that concentrates on the problems and searches for solutions.

It should be kept in mind that, in most of the cases, nutrition educators and nutrition promoters come from the same context as their clients/target group. This means that nutrition education/communication and BCC have to begin with the nutrition educators and promoters (Box 6), as only if they adopt the desirable behaviour themselves would they be able to promote it among others.

There are different entry points and methodologies to conduct nutrition education/communication:

- school-based nutrition education addressed to teachers (training of trainers [ToT]) and pupils, e.g.
  - school gardens/demonstration plots
  - nutrition education embedded in natural science classes, e.g. biology
  - cooking classes
- community nutrition education addressed to women, girls, boys and men
  - cooking demonstrations
  - demonstration plots
  - peer-to-peer education
  - (adult) literacy classes
  - extension services (including agriculture, health, etc.)
  - radio programmes
  - mobile phone services (sending SMS with key messages)
- institutional nutrition education
  - integration of nutrition in curricula of higher learning institutions, colleges and training institutions

**Box 6: Combining nutrition education and IHFP**

IHFP is unlikely to achieve the desired impact unless it is combined with a strong nutrition education component targeting women in particular, but without excluding men. Sharing knowledge on nutritional value of foods, food quality and safety, methods of food preservation, processing and handling, preparation and consumption often leads to changes in nutritional habits and practices. Successful nutrition education entails the active participation of the people, their awareness of their nutrition problems and their willingness to change. It also requires intersectoral collaboration among the agriculture, education, health, and communication sectors. Finally, to be effective, nutrition messages should be simple to understand; communicated with confidence by extension service providers, community facilitators and village groups; and well-tailored and actionable.

Source: FAO; REACH

Overlapping with food security aspects, storage and processing should be additional elements in nutrition education. Technologies which help to protect micronutrients (e.g. solar drying, preservation and conservation), but also might provide an opportunity to market surplus production and avoid food waste, should be part of nutrition education.

Elements of nutrition education will require competence and experience. Therefore, IFAD-funded projects should seek partnership with service providers adequately equipped with the technical competence and experience to deliver quality nutrition education.

Important to factor in is an inclusive approach that avoids the stereotypic understanding that nutrition is a women's concern only. Nutrition security requires commitment from all members of a household and the community. Therefore, a gender-sensitive approach to nutrition is a strong contributor to the success of nutrition education.

Content and delivery modalities of the training are identified under step 6.

### Step 4 – Identify IHFP-supporting interventions

To ensure the sustainability of IHFP activities, the designers – in consultation with relevant experts on the mission team – will also need to identify in a participatory manner how resource-poor households would access some essential inputs (land and water, seeds, tools, planting materials, new animal breeding stocks, vaccines and medicines, fish juveniles or breeders) and services (extension, training, technical advice and follow-up) or address constraints, some of which are beyond the specific domain of IHFP activities (water, limited financial assets for financing operational costs, gender imbalances, etc.). This may require the identification of supporting interventions, including partnership or cofinancing opportunities.

#### Table 5: Constraints and options for IHFP

| Constraints to sustainable IHFP | Possible options |
|---|---|
| **Land access and tenure security** | ▪ Engage in policy dialogue with government to secure user rights, especially for certain groups of people (women, orphans, etc.) |
| **Water shortage or vulnerability to floods** | See Table 4 |
| **Access to input supplies** | ▪ Support local business mechanisms (e.g. village nurseries, input supply groups)<br>▪ Support local revolving fund groups or mechanisms (e.g. village banks)<br>▪ Support saving and credit groups, cooperatives or schemes[10]<br>▪ Explore partnership/linkage opportunities with microfinance institutions or programmes |
| **Extension service and training provision** | ▪ Adopt the farmer field school (FFS) approach<br>▪ Build capacity of extension staff, local service providers and community facilitators |

Source: Adjusted from: IFAD, Family Poultry Production, video training

**Additional resources:**

FAO training package, *Improving Nutrition through Home Gardening* (water management): http://www.fao.org/docrep/003/x3996e/x3996e00.htm

- IFAD Scampis webpage, including lessons learned to develop a local value chain of drip irrigation equipment: http://www.ifad.org/english/water/scampis/
- http://www.fao.org/nr/land/sustainable-land-management/farmer-field-school/en/

### Step 5 – Define implementation partners and arrangements for IHFP activities

The designers will need to assess the availability, capacity and accessibility of public and private service providers at all levels, including at the grass-roots (NGOs, extension agents, PMUs, various groups, community leaders and facilitators, etc.).

#### Garden component

*Extension services.* Access to good quality seeds and access to water and irrigation equipment throughout the year should be ascertained. In case such services are not available, project design should provide for: (i) training of selected experienced farmers to become local service providers and/or to set up a village-based seed enterprise; (ii) engaging with the private-sector retailers to have required or recommended irrigation equipment in stock.

[10] See *Support Community-based Financial Organizations: How To Do Note*, available at: http://www.ifad.org/knotes/ruralfinance/cbfo_how_to.pdf

### Livestock component

*Veterinary services.* Access to vaccines/medicines also needs to be ascertained. In case such services are not available, project design should provide for: (i) training of one or two selected farmers to act as community animal health agents; (ii) training and facilitation for the establishment of small village pharmacies; and (iii) facilitation to link community animal health agents and managers of village pharmacies with a supplier of veterinary products/inputs.

### Fish pond component

*Small-scale aquaculture services*, including access to quality fish seeds/fingerlings, also needs to be ascertained. In case such services are not available, project design should provide for: (i) training of a network of private fingerling producers and/or small-scale business-oriented village hatcheries to promote exchange of technical and market information and broodstock; (ii) support to collective or group approaches (SHGs or community-based organizations) to foster knowledge-sharing and overcome constraints in access to information and inputs; and (iii) the development of networks between seed producers and fish farmers via FFSs or farmer-to-farmer training.

In some rural areas where services are not readily available, there will be a need for innovative ways of accessing inputs. These may include training a few farmers as fingerlings producers and linking them with a government institution that can supply them with good quality breeding stock. Alternatively, they can be trained on how to select and obtain breeding stock on a regular basis from the natural rivers and adapt this knowledge in the fish ponds. Farmers can also be trained on how to formulate and prepare fish feed using mainly local materials available at the farms.

- **Nutrition education component.** *Extension services and nutrition promoters*. This requires a multisectoral approach linking nutrition education with health, agriculture, education and social services. Ideally, the nutrition education component should be based on a nutrition causal analysis. The project design should cater for: (i) training of selected women to become champions of nutrition education among other women (women-to-women support groups); (ii) community-targeted nutrition education sessions that include men and community leaders; and (iii) training in nutrition for multisectoral teams (covering health, agriculture, education, social services, etc.).

When the capacity of the local extension system is low, the designers should develop a capacity-building plan (see step 6). It is also important to establish clear roles, responsibilities and reporting lines among the implementing partners, as well as coordination/interphase mechanisms with other project activities/components for proper activity planning, sequencing, executing and monitoring.

**Additional resources:** FSNnetwork, Designing for behavior change in agriculture and natural resource management, health and nutrition: http://www.fsnnetwork.org/document/designing-behavior-change-agriculture-and-natural-resource-management-health-and-nutrition

## Step 6 – Conduct training need assessments and design a capacity plan

At design level, preliminary assessments need to identify:

- indicative training needs of the target group, which will be fine-tuned during implementation through more in-depth, specific and gender-sensitive training need assessments conducted in a participatory manner among the target households by the implementing partners/service providers. The assessments should identify gaps in technical skills (i.e. integrated farming practices), social capital-building (if group approach is adopted) and nutrition education.
- indicative capacity gaps of the implementing partners at all levels in relation to the delivery of activities related to IHFP.

The following outputs will be produced preliminarily for the design report and updated as necessary during implementation:

### Table 6: A menu of training options for target communities

| Content | Delivery modalities | Training materials |
|---|---|---|
| **Garden preparation**: building garden and protective fences using local materials; maintenance.<br>**Farming and crop management practices:** integrated farming practices, crop rotation and intercropping, weeding, watering and water management, mulching, composting, green manuring, integrated pest management (IPM).<br>**Basic animal health practices**: basic biosecurity measures to reduce risk of disease.<br>**Basic animal husbandry and management**: improved feeding and basic livestock husbandry practices.<br>**Supplementary feeding with** local materials and especially **insects** (e.g. termites, maggots), dried blood, crop residues, etc.; management of young animals; improved management practices, e.g. appropriate ratio of males/females, breeding calendars prepared to have the end product at times of highest market demand, appropriate feeding before and during the breeding period, brooding of hens, selection and castration of male sires.<br>**Fish pond preparation and fish culture**: pond construction and maintenance; minimizing health risks, water management (managing nutrients and oxygen), selecting and combining species, stocking densities, feed preparation and feeding strategies using on-farm resources, fish health, fish breeding, keeping fish safe from theft and predation, harvest timeframes, marketing.<br>**Post-stock management**: preparation of fish feed and fertilizers using on-farm resources; caring for fish.<br>**Water management**: to serve the various uses of the garden, the livestock, the pond and the household.<br>**Nutrition education:** importance of a nutritious and diversified diet; food preparation, processing and storage; food safety and hygiene; feeding children and the sick, etc.<br>**Group management** and **social capital building**, basic accounting and marketing skills (if relevant), including self-organization for pooled marketing. | ▪ Conventional/frontal training<br>▪ Group training Couples training<br>▪ School training/gardening and nutrition education<br>▪ FFSs<br>▪ Demonstrations/learning sites<br>▪ Farmer-to-farmer<br>▪ Walking tours/exchange visits<br>▪ Village sensitization campaigns<br>▪ Fairs<br>▪ Drama representations<br>▪ Radio programmes<br>▪ Household methodologies<br>▪ Cooking demonstrations | ▪ Paintings<br>▪ Pictures<br>▪ Videos<br>▪ Leaflets |

**Audience**. Training modules need to be tailored to the audience (i.e. women/men, women/orphans/elderly-headed households, households already engaging or not in IHFP, etc.); use local languages; and be gender-friendly (e.g. in terms of selection of appropriate venue, gender of trainees and/or participants, taking into consideration women's workloads and daily commitments)(see Box 7).

**ToTs.** Depending on the outcomes of assessments made under step 5 (identification of implementing partners and arrangements for IHFP activities), the project may need to train community-based trainers to become para-veterinarians or animal health workers, service providers (e.g. to provide basic vaccinations or basic farming support), group leaders or nutrition educators/promoters, with priority being given to women.

A **comprehensive training and capacity plan** for IHFP should be developed, which may be integrated into the overall project plan (if any), specifying target audience (implementing partners and target groups),

training content, training providers, training delivery modality, project year of delivery, estimated costs and complementarity/coordination with other training modules and/or project activities. This will be a living document which should be regularly updated during implementation.

**Links to complementary resource materials:**

- FAO, *Improving Nutrition through Home Gardening:* http://www.fao.org/docrep/003/x3996e/x3996e00.htm
  - Household training in home gardening development
  - Household training in diet and nutrition
  - Practical nutrition for field workers
  - Recipes
- FAO, UNICEF, *Healthy Harvest – A training manual for community workers in good nutrition, and growing, preparing and processing healthy food*: http://bit.ly/LMtBte
- FAO, *Family nutrition guide*: http://bit.ly/1aKwc2M
- FAO, Complementary Feeding for Children Aged 6-23 Months: http://bit.ly/1h0SMam
- WorldFish *Center, Household based pond aquaculture, homestead gardening and nutrition awareness*: http://bit.ly/1fPX2nO
- IFAD, for training/capacity plan preparation: toolkit on institutional analysis and development http://www.ifad.org/knotes/institution/index.htm
- IFAD, On household methodologies: http://bit.ly/1eKSgKh

**Box 7: Household methodologies, food security and nutrition**

Household methodologies have the potential to address household food security issues. The Agricultural Support Programme (ASP) in Zambia trained farmers to calculate their calorie needs. Women and men had to agree to set aside sufficient maize to cover these needs. Any remaining maize could be used for visitors and social functions, or for sale. Furthermore, participating households had to attain household food security before they were permitted to move to the next level of the programme. An evaluation conducted 2 years after project completion showed that during the hungry season only ASP households had sufficient maize set aside to meet their food needs. No household methodology has addressed nutrition issues so far.

Source: IFAD, *Household Approaches Synthesis Paper'*

## Step 7 – Identify indicators for M&E of IHFP interventions

The following are examples of indicators that could be used by PMUs for progress monitoring and included in the project design logical framework. Ideally, M&E should be conducted with the participation of community members.

### Outcome indicators

- increased quantity of fruit, vegetable, fish and animal products produced for home consumption
- increased dietary diversity at household level
- increased income earned from sales of IHFP produce and/or savings from purchase of vegetables/fruits/fish/animal products (relevant only in the case of surplus)

### Output indicators

- number of people trained in IHFP (by gender)
- number of people sensitized on nutritional issues (by gender)
- number of demonstrations established
- number of homestead gardens established
- number of small livestock operations established
- number of households eating locally farmed fish.

## Step 8 – Contribute to the project design report

The design document should contain an outline and description of the main sets of activities to be carried out during implementation and the estimated budget. The overall approach that a project will adopt in promoting IHFP should also be described. In addition, the designers should prepare an appendix based on their areas of expertise, while the mission leader will select subsections and collect inputs from the mission members for inclusion in the project design report (PDR). Suggestions regarding where to include inputs on the proposed IHFP activities in the PDR are provided in Table 7.

### Table 7: Contributing to the IFAD project design report

| | | | |
|---|---|---|---|
| **I. Strategic context and rationale**<br><br>**A. Country and rural development context**<br><br>**B. Rationale** | Basic information and data about in-country food security and nutritional situation, including at lower levels (e.g. regional, provincial), depending on project area and country institutional situation<br><br>Brief justification on the choice to opt for IHFP as a means to address food security and nutritional issues | **Appendices**<br>App. 1 – Country and rural context background | **Steps**<br>**1**<br><br>**1** |
| **II. Project description** | | | |
| **A. Project area and target group** | Brief analysis and description of:<br>➢ Food security and nutritional situations (including production and consumption patterns, food preferences, nutrition issues especially among women and children)<br>➢ Socio-economic characterization of the target group with respect to their engagement in project-supported IHFP (e.g. access to assets and services, labour availability, vulnerability)<br>➢ Targeting criteria and approach (household-based or group-based) in relation to IHFP activities | App. 2 – Poverty, targeting and gender | **1, 2** |
| **B. Development objectives and impact indicators**<br><br>**C. Outcomes/components**<br><br>**D. Lessons learned** | ➢ Description of IHFP activities and capacity-building/training by component, as relevant<br>➢ For each activity/component, inclusion of relevant outcome indicators<br>➢ Definition of scaling-up interventions (if any)<br>➢ Definition of an exit strategy<br><br>Description of what has been learned from in-country experience in IHFP, in the context of IFAD's, other institutions' and government-led programmes (if any), and how these lessons have been taken into consideration in the project design | App. 4 – Detailed project description<br><br>App. 3 – Country performance and lessons learned | **3, 4, 6**<br><br>**1** |
| **III. Project implementation**<br><br>**A. Approach** | Brief description of the project approach with regards to IHFP (e.g. combination of technical support with nutrition sensitization; focus on enhancing the household's consumption and food security; coordination with complementary interventions, both within the project or through coordination with other donors' interventions, the scaling-up dimension, etc.) | App. 4 – Detailed project description | **1, 3** |
| **B. Organizational framework**<br><br>**C. Planning, M&E, learning and knowledge management**<br><br>**D. Financial management, procurement and governance** | Implementing partners and service providers for IHFP activities, including roles and responsibilities and reporting lines | App. 5 – Institutional aspects and implementation arrangements | **5** |

| | | | |
|---|---|---|---|
| **E. Supervision**<br><br>**F. Risk identification and mitigation** | Any risk directly or indirectly associated with IHFP activities in the project | | |
| **IV. Project costs, financing, benefits and sustainability** | Estimated budget related to IHFP activities should feed into the overall project budget. Although the benefits of accessing additional micronutrients and thereby addressing chronic undernutrition are extremely difficult to calculate, there is evidence of cost implications if chronic undernutrition is not addressed.<br>Sustainability will be achieved if an understanding of nutritional requirements is created and the project is carefully designed according to the conditions. Seed multiplication and rotating systems for livestock will also increase the sustainability of the project. | App. 9 – Project costs and financing | **3, 4, 6** |
| **Logical framework** | Incorporate output/outcome indicators to monitor progress and impact | | **7** |

# Intensification and expansion

Depending on the type of project, the designers will need to determine what "type" of intensification among the following options is most appropriate:

- from small to bigger gardens, if the activities are managed well and certain constraints (e.g. land, water, labour) can be overcome
- from one activity (e.g. gardening) to others (e.g. backyard livestock and/or fish ponds), provided the above constraints can be overcome and a sustained mechanism of input/service supply can be put in place
- through expansion of a successful model (within or outside the project), pending review of the implementation arrangements
- from a consumption-focused IHFP to a more market-oriented proposition, pending an assessment of the target group's interest and vulnerability status, as well as availability of adequate service provision, including in the post-project period.

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Microgardens: http://www.fao.org/hortivar/scis/scis.htm?TRX=Redirect&TO=DOC&ID=9
Natural gardening: http://www.sendacow.org.uk/assets/files/Related-downloads/Natural_Gardening_Leaflet.pdf

**Video**

In Burkina Faso, a garden maintained by local women benefits a whole community:
http://www.unicef.org/infobycountry/burkinafaso_66185.html

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