



Integrating Permagarden Approach: A Tip Sheet for Programs



Incorporating Permagarden Approach into your next proposal

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ABOUT SCALE

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Why the Permagarden Approach?

Implementing partners across the world seek to design programs that address a common problem: households struggle to produce enough food and income due to low yields resulting from poor soil fertility, little access to water, and a lack of access to the right inputs and of quality. At the same time, the compounding effects of climate change, conflict and inefficient markets make it harder for households to achieve food and nutrition security. Food security programs often focus on increasing the availability, access, and utilization of safe, nutritious food, and to improve incomes through the promotion of home gardens. However, home garden activities usually focus on improving access to inputs like purchased/hybrid seeds, fertilizer, and small-scale irrigation systems that provide only temporary gains in productivity during the project period—gains that too often are lost after the project ends.

The Permagarden Approach is different from other community or kitchen garden activities because it focuses on addressing key agronomic and ecological constraints, building soil fertility, integrating a diversity of annual and perennial plants, and banking soil moisture in a way that sustains long-term productivity and reduces dependence on purchased inputs. The Permagarden Approach is distinct from most typical home or community garden approaches in that it:

- makes use of locally available, organic resources,
- is low-input and low-cost,
- incorporates local and readily available seed varieties,
- is adaptable to local contexts and conditions,
- is responsive to climate change, and
- supports year-round production with sound water and soil management.

Important Considerations

While thinking through how/whether the Permagarden Approach should be incorporated in a program, there are a few key considerations to take into account. First, review the program scope and budget, geographic coverage, program duration, and the team's appetite for integrated program design to confirm the Permagarden Approach would be a suitable addition to the overall program. These considerations are discussed in greater detail below. **It is important to understand that the Permagarden Approach is not the right fit for every program; it requires appropriate timing and resourcing, or it will not be successful.**

Timing and program duration are important considerations both in terms of how the program period lines up with agricultural seasons and the number of seasons within that period. Generally speaking, the Permagarden Approach is most effective when a program encompasses at least two seasons and plans to work with the same participants for at least two successive seasons in order to build and reinforce skills; however, the approach can still be a good fit for shorter term emergency programs, especially for those that have follow on awards.

The key is to be realistic when framing expected results in the proposal and setting targets. It is recommended that programs set smaller targets for the first year rather than attempting to achieve full program scale at once, and to cap overall targets for permagarden activities at modest levels (for example, 2,000 households). Although permagarden targets may be smaller than most proposals'



agriculture targets, larger numbers can be reached by including additional activities into the proposal that help to support regenerative agriculture approaches.¹ For example, incorporating seed systems interventions that emphasize and leverage local, informal seed networks and/or training around water harvesting, Integrated Pest Management, nutrition, and marketing complement permagarden approaches and can help lay the groundwork for future regenerative agriculture work. It is important that the program has time to learn and adapt, reflect on and incorporate local adaptations and then build them into future rollout phases. This may not always be possible with one-year programs.² In particular, program teams should keep the following parameters in mind when incorporating Permagarden Approach in their design:

- **Programs should have adequate budget and time for staff and partner training (ToT)** on the approach before cascading to households can begin. Partner training and community engagement should begin four to six weeks prior to site establishment.
- **Establishment of permagarden plots should be timed during the early weeks of the rainy season or within a month of the end of the rains.** Permagarden plots can be very challenging to establish during the height of the dry season when soils are hard, a factor that may limit household uptake of the approach.
- **Special note for short-term programs:** Short-term emergency programs of 6-12 months will not provide enough time for permagarden techniques to become integrated into regular production practices or show strong impact, unless they are part of a planned cycle of programs, or permagardens have been established in the area under previous programs. Under single, short-term programs, only pilots should be established.
 - **Consider the participants targeted by any short-term emergency program:** are they farmers? Are they going to be in the same location long enough to harvest their plots? Is permagardening aligned with the desires and priorities of the community? Can participants physically handle the work? One of the benefits of the Permagarden Approach is that once established, the beds need very little maintenance for five years; however, if these are frequently displaced populations, consider whether they would prioritize making a five-year investment using the techniques involved.

Resourcing the Permagarden Approach is a little different from many typical kitchen garden activities, requiring careful attention to key implementation steps and follow up.

- The implementation team and all relevant partners and extension officers must complete a [5-day permagarden training of trainers](#) to prepare for roll out and support of the process.
- The team and partners will then train participants on the approach using the [3-day permagarden training guidelines](#).

¹ Regenerative agriculture is a conservation and rehabilitation approach to food and farming systems. It focuses on topsoil regeneration, increasing biodiversity, improving the water cycle, enhancing ecosystem services, supporting biosequestration, increasing resilience to climate change, and strengthening the health and vitality of farm soil.

² While one-year grants are not the best fit for this approach, they can work under successive rounds of funding or follow-on grants. Since follow-on grants are not a guarantee, it is recommended that one-year programs stick to demonstration gardens only during the initial year of funding, waiting until follow-on funding is secured before expanding.

- Since the Permagarden Approach relies on the careful cascading of techniques to maintain technical quality across sites, program teams will require adequate budget, time and staff resources for the process of community/household-led site identification and plot design, regular follow up, and [joint monitoring](#) and mentoring visits. This can build from and/or be informed by other community engagement activities already in the program design, for example a community visioning process or other initial assessments of shocks, stresses, and environmental trends.

Integrated Program Design. Kitchen and community gardens with a food security objective are often placed under the nutrition component of proposals, with little or no integration with other activities. In contrast, the Permagarden Approach is a resilient agriculture approach that provides households the opportunity to produce food year-round at a more intensive scale, presenting farmers (often women) with greater livelihoods opportunities. The approach relies on the use of household resources (including waste streams and greywater) and is strengthened when rolled out in combination with Social and Behavior Change (SBC) and household decision-making approaches. For this reason, programs are encouraged to consider opportunities to integrate permagarden interventions with other key program components including gender, agriculture, nutrition, markets, SBC, WASH, and livelihoods. Ensuring that the program team takes the time to integrate the Permagarden Approach in a cohesive way across the program is a key to successful rollout.

Teams should review the [permagarden guidance documents](#) to further inform its decision-making around integrating the approach in their program design.



Photo Credit: Rwanika Nabii Jonas



How to Incorporate Permagarden into Programs

Important Program Design Elements

The Permagarden Approach includes six core elements: identifying resources, site design, soil health, water management, bio-intensive planting, and plant health. Some of these elements will have scoping, planning, targeting, and design implications for programs, which are highlighted in the sections below.

Identifying Assets and Resources

The Permagarden Approach emphasizes the use of local resources over external or purchased inputs. This requires program teams and communities/households to spend time jointly assessing and mapping out these assets and resources. Drawing out local knowledge through this process in turn leads to stronger buy-in and ownership of the approach and is therefore a critical factor in household uptake and eventual impact. Important considerations for program integration and targeting include:

- **Available space.** The space available to a household for a permagarden can be as little as a few square meters or as large as 100 m². Gardens should be located within, or close by, the compound, ideally near the kitchen, and should receive at least four hours of sunlight a day. The team should have a realistic sense that the households targeted in the proposal meet these specifications and have reasonable access to land.

In emergency settings, programs may need to implement shared communal permagardens rather than household-level gardens to mitigate limited land/space and the community should decide where to place the garden to ensure safe, equal daily access.

- **Available water sources** at each site will be important but need not be limited to homestead wells or nearby municipal taps; underutilized runoff water from roofs, hillsides, roads, and pathways can also be controlled, redirected, and stored within the homestead. Household wastewater from the kitchen and bathing can become the primary irrigation source in the dry season. So, although sites need not rely on piped or well water, teams will need to factor in time and expertise for developing alternative water catchment and collection systems.

In emergency contexts, these water catchment systems may be communal, rather than individual homesteads-based. Particular attention should be given to understanding decision making around water access/availability (as well as governance of other resources). Further guidance on water management can be found in the Permagarden Manual.

- **Livestock** are sources of useful materials or labor, but will also need to be controlled by fencing or other means and those steps should be part of program design and budgeting (e.g., household contributions of labor and materials, and any program support for things like fencing). In emergency contexts, participants may not have any livestock or access to important soil amendments such as manure; if other organic materials are not available, the Permagarden Approach might not be a good fit for the context.

- **Plants and seeds.** The approach incorporates both annual crops and plants as well as perennial trees, shrubs and other plants to support year-round production, build biodiversity and long-term sustainability. The approach cannot rely solely on purchased, distributed vegetable seeds such as the standard mix of cabbage, onion, tomato and hybrid seeds. It requires local varieties that are accessed through informal seed systems rather than agrodealers alone. Many indigenous varieties are important to food security and are readily available locally. Neighbors, friends, and extended family may have seeds or plants they are willing to share—identifying and leveraging these sources must be incorporated into the program’s implementation plan. It will also be important to understand and emphasize these informal, local seed networks in the training and cascading process, which should be accounted for in implementation planning and budgeting. The permagarden training emphasizes the use of local soil amendments and natural pesticides, rather than external or purchased inputs.

In emergency contexts, participants may have left their homes with nothing and have no access to or reserves of seeds or planting materials, making initial distributions of basic inputs necessary. Ideally, these decisions should be informed by a Seed System Security Assessment (SSSA).³

- **Tools** required to create a permagarden include a hoe, bucket, pick, A-frame materials, and machete. Programs can also survey the household and neighborhood for additional tools that could be useful. As with seeds, often no tool distributions are necessary for permagardens to be successful, using local resources instead to build sustainability.

Again, *in emergency contexts*, participants may have left their tools and materials behind, making it necessary to distribute basic tools.

Site Design

Long-term planning and mapping of the garden site is an important step in establishing sustainable permagardens. One of the first steps in site design is to understand the natural flow of rainwater and nutrients across the landscape, determining where and how runoff water enters the land and where it exits, using simple A-frames to mark out the contour lines of each plot. The aim is to effectively control water during the wet season and to access it during the dry season. The site design step need not be lengthy, but program proposals should budget a half a day per site to accomplish it.

It is normally most efficient to work through demonstration sites or learning sites, set up at a community member’s home and selected based on proximity to target households, at which multiple community members can learn and practice the techniques together before replicating them at their own households. These sites should not be separate or program-run demonstration sites or farmer field schools, but sites located at participants’ actual homesteads. This approach also helps with troubleshooting and scenario planning, testing, and adapting at demo sites to help farmers understand what to do in which scenarios and to reduce risks around adopting permagarden on their own plots.

³ A repository of SSSA reports can be found at www.seedsystem.org.



- A permagarden can be located anywhere near the home, ideally near the kitchen. Plot size will depend on available water resources, the level of energy the gardener is willing to commit, and the goals of the participant and their household.
- Programs are encouraged to not select the wealthiest household or “best” land for the demonstration site. Selecting a less-than-optimal plot, and then demonstrating how the techniques can succeed, can be a powerful motivator to other community members - but will require dedicated follow-up and support to ensure success. In the dry season, garden beds may be scaled down to accommodate reduced water availability.
- A good starting size for a typical household permagarden is 16 m² (e.g., 4 m by 4 m). More space can be added later, depending on family commitment and desire to expand, **but it is important to start small**. Beginning with a large space can quickly become too labor-intensive and discourage farmers from continuing.

Soil Health

Building up the health and structure of the soil is a central focus of the Permaganen Approach. Deep soil preparation of the beds (double digging 40-60 cm) is an essential first step in plot establishment and will require greater investments of time and labor compared to standard kitchen garden approaches; however, once established, beds will not need to be re-dug for another five years, assuming the gardener continues to feed the soil with organic material and amendments. Targeted households will also need reliable access to waste materials such as animal manure, wood ash, and kitchen waste to use as soil amendments, and crop residues or leaves to use as mulch. Locations where these resources are thin may not be good candidates for the approach and should not be considered during targeting and site selection.

Water Management

Rather than an approach where kitchen gardens are established, seeds and tools are distributed and everything depends on the availability of a well, nearby tap or a solar pump/tank to flourish (leaving gardens to die back if the well runs dry or the pump breaks), the Permaganen Approach relies on investments in water harvesting and soil moisture conservation. It is important to factor this into project timelines and expectations. Participating households will be constructing A-frames to mark out and then dig beds along contour lines to allow water to slow, sink and spread in the soil. Water harvesting structures such as swales and berms will need to be dug within garden plots; farmers may also dig half-moons and catchment basins in the garden and surrounding household compound. Project teams and households will need to factor in time for monitoring and maintenance of these structures, and be open to the adaptive process of establishing a successful permagarden. A good rule of thumb is to expect that these monitoring visits could start out as monthly and get less frequent over time (e.g., in year two) as permagardens become well established. These steps should be reflected in the project timelines presented in the proposal, and in the budget.

Bio-intensive Planting

One benefit of the Permaganen Approach is that it uses locally available plants and varieties, and the garden is designed to utilize the types of plants that are available locally. Households should be encouraged to use indigenous varieties that people already eat locally and that are readily available

through informal networks. The seeds gathered for the garden should reflect a household's diverse diet.

With the proper climate, resources, and management, it is possible to grow continuous crops of vegetables throughout the year in the permagarden. This requires using crop rotation and intercropping principles, as well as staggering plantings, instead of planting everything all at once. These principles help provide continual harvests of healthy vegetables and disrupt pest and disease cycles in the garden.

This requires a shift from more traditional kitchen garden approaches that promote a handful of standard vegetables (e.g., carrots, cabbage, onions, tomatoes that may not be very well adapted to local conditions) and instead leverage the adaptability of local crops and plants, giving farmers greater opportunities to sell different kinds of products (e.g., fruit, fodder crops, fuel wood) over the course of the year. Permagardens also feature a mix of annual and perennial plants and incorporate trees, shrubs, and fodder plants, which may represent a departure for some households and require more planning and lead time during implementation.

External and Contextual Factors

In addition to considerations around some of the core design elements for the Permagarden Approach, there are a few things to keep in mind when incorporating permagarden into proposals in a way that reflects the country context.



Photo Credit: Thomas Cole



- Cascading/scaling can be undertaken in a number of ways to help achieve scale while maintaining community ownership of the process. Some programs have done this through mother groups, farmer field schools, or peer-to-peer networks. Farmers sometimes collaborate to help each other establish their own individual plots, rotating to each homestead until each neighbor has their plot dug. Other programs have found that incorporating agriculture extension agents in their training and outreach can help support cascading efforts.
- Permagarden work depends on local knowledge and resources, and therefore relies on early community engagement, community visioning, and an understanding of community aspirations to set realistic goals and manage for impact. Proposal design should factor in community engagement as a first step and be prepared to adapt to local needs, norms and conditions. It is important to ask households before work begins, do people really want to do this? Are they aware how their landscape will change?
- Understanding community and household gender dynamics, particularly around labor and traditional responsibilities around gardens and farming, is important. Make sure there is agreement between men and women on adopting the Permagarden Approach. This underscores the need for integrated program design. Where appropriate, having permagarden participants also included in gender-focused household dialogue activities around labor sharing, ownership of production, and access/use of resulting income streams are highly recommended. Rolling out the approach via mother care or farmer groups also invites opportunities for communal labor and builds community cohesion.
- Permagarden is not a one-size fits all approach, it is adaptable to local contexts and relies on project teams' ability to make changes if things aren't progressing as originally planned. If the particular funding mechanism in question is not able to accommodate more adaptive program management (for example, the ability to adjust targets as the approach is rolled out in a particular context), it is likely not a good fit for this approach.

Budgeting

As touched on in the preceding sections, there are a few areas where permagarden is different from more traditional kitchen or community garden approaches, and some of these differences will need to be reflected in the budget. Activities to consider in your budget include:

- Conducting a barrier analysis and creating/disseminating SBC messaging in support of farmer adoption and uptake
- 5-day TOT for project staff and partners
- Make Me A Change Agent training for project staff and partners recommended
- Site selection and community aspirations/visioning process
- Risk assessments for each target community, identifying risk factors, elements that could go wrong and adjusting site selection/targeting as needed
- 3-day training at demonstration sites for target households
- Monthly monitoring visits conducted jointly with households
- Mentorship, troubleshooting and peer-to-peer learning activities

- Impact measurement and building the evidence base for permagarden impact. This can be accomplished through regular Monitoring and Evaluation (M&E) mechanisms, but time and funds should be budgeted to capture evidence of impact
- Permaculture certification course for program lead (suggested)

Staff Skills

Permagarden is a systems-based approach that is most successful when implemented through an iterative process of careful observation and adaptation. It benefits from incorporating insights gained through community engagement, tapping into indigenous knowledge, and identification of local resources. So, although it is an agriculture intervention, the team that runs the activity will need more than just agriculture expertise. For instance, an agronomist with a PhD might look like a great candidate on paper but may struggle with the kind of systems thinking and participatory leadership required with the Permagarden Approach. Here are a few recruitment considerations, including the qualifications and experience to look for when hiring for successful permagarden leaders.

- 3-5 years' experience designing and implementing regenerative agriculture, watershed management or environmental conservation programs
- 3-5 years' experience implementing and/or collaborating cross-sectorally on community engagement, community visioning, risk assessment, social behavior change, or similar program interventions
- Permaculture certificate preferred - if this is too limiting to the pool of candidates, consider paying to send the selected candidate to a permaculture certification program early in program start up
- The successful candidate should be a creative, systems thinker with an understanding of/experience in SBCC, participatory facilitation, and community engagement
- Degree in agriculture, ecology, environmental science or similar field, or equivalent experience

Learning and M&E

All programs involve learning. For the Permagarden Approach specifically, it will be important to incorporate monthly monitoring visits during the first four months for each newly established plot. These monitoring visits are conducted jointly with households using the [Permagarden Checklist tool](#) and are important for troubleshooting, assessing/identifying risks or problems, and making adjustments. The learning activities for this component should also include mentorship or learning exchanges with other programs implementing the Permagarden Approach, as well as peer-to-peer learning groups and opportunities for participating households.

New permagarden programs also present the opportunity to contribute to the growing body of knowledge and evidence of impact around resilient agricultural systems. For example, contributing data and insights around farmers' return on investments of time, labor, and resources in adopting this new approach are critical to the community of regenerative agriculture practitioners. Proposal development teams should incorporate baseline evaluation and impact indicators and it is recommended that longer-term programs work with the SCALE Award to articulate key learning objectives around the intervention, which can be achieved through pilots or case studies. A few sample impact indicators include:

- Extent to which year-round production of plants is achieved (including during dry season)



- Extent to which crops in the permagarden provide nutritious, varied diet
- Extent of erosion (high, medium, low, non-existent)
- Proportion of surface water harvested on-site
- Extent to which crops (and trees, if relevant) show signs of water stress
- Proportion of wastewater captured and used
- Depth of garden beds
- Extent of soil compaction
- Strength of plant growth (weak, medium, vibrant)
- Brix reading for specific crops
- Surface temperature of bare soil (cool, medium, hot)
- Temperature of soil under mulch
- Soil organic matter content/visibility of organic matter
- Proportion of crops producing income
- Extent to which crop mixture provides dry and lean season food
- Visible damage from wind/water
- Visible damage from animals
- Visible damage from pests
- Germination rates
- Quality of fruiting and flowering
- Visible stress during drier times

FAQs

1. Are permagardens compatible with the distribution of seeds?

The Permagarden Approach relies heavily on local, often more informal, seed systems to build biodiversity and long-term sustainability. The approach incorporates both annual crops and plants as well as perennial trees, shrubs and other plants to support year-round production. The approach cannot rely only on purchased, distributed vegetable seeds such as the standard mix of cabbage, onion, and tomato. That said, there may be contexts (especially in emergency settings, such as IDP camps) where participants will have no or little reliable access to seeds to start their gardens. In these cases, it has been found that some initial distributions are necessary; however, these distributions should always be complemented with local seeds, tree cuttings and other locally available resources as possible. It will also be important to understand and leverage these informal, local seed networks, informed by a SSSA.

2. Are permagardens compatible with fertilizer and other inputs distribution?

The distribution and use of fertilizer is unnecessary as Permagarden Approach relies on locally available soil amendments to build soil health and productivity over time. Healthy soil and water management are the foundation of permagarden practices. By incorporating soil organic matter, permagardens improve soil structure, microbial activity and water infiltration, enable water retention, and increase the availability of nutrients for plants. Some of the relevant permagarden practices include compost tea, cover crops, and the use of amendments such as wood ash, biochar, and charcoal dust that provide key minerals and micronutrients and help hold soil moisture.

However, there may be contexts in which soils are badly degraded or soil amendments are not readily/abundantly available, particularly early in the program cycle. In these cases, some hybrid approaches of purchased fertilizer and soil amendments may be required to improve production in the short term. Integrating IPM practices and techniques can further reduce the need for the distribution of purchased inputs like pesticides or herbicides.

The tools required to create a permagarden are simple and few: a hoe, bucket, pick, A-frame materials, and machete. Oftentimes these are available and can be pooled from among participating households and communities, meaning no tool distributions are necessary for permagardens to be successful, using local resources instead to build sustainability. Again, in emergency contexts, participants may have left their tools and materials behind, making it necessary to distribute basic tools.

3. What are some of the lessons around the Permagarden Approach and seed voucher programs using agrodealers?

Some important lessons on linking this approach to seed vouchers and agrodealers can be drawn from the [Final Performance Evaluation of Northern Karamoja Growth, Health, and](#)



Governance Development Food Assistance Project. The Feinsein team interviewed dealers, agents, and members of recipient communities to better understand the reasons behind low redemption of the seed vouchers. According to the analysis of these responses, the main reasons were i) the costs of the improved seeds, ii) reluctance to change planting practices, iii) issues around the packaging of the seeds, iv) confusion over how to redeem the vouchers, and v) timing of the seed deliveries to the merchants. These lessons point to the potential drawbacks of relying too heavily on input voucher programs and underscore the importance of the Permagarden Approach's emphasis on local seed and input resources.

4. **The Permagarden Approach includes using wastewater to support gardening activities. Does USAID restrict the use of greywater in its programs?**

According to BHA guidance, with few exceptions, BHA does not fund greywater irrigation. However, on a case-by-case basis and with a very strong justification, BHA may fund very small household garden activities that use kitchen greywater in water-scarce environments if the water is not applied directly to the edible portion of the plant. To cover this point adequately in a proposal, BHA will require a sound technical design description explaining the use of the greywater, an explanation of how the intervention mitigates any related public health risks, and a monitoring plan to ensure standards are being met.

5. **Where can I go for more information?**

Equip yourself with the Permagarden Toolkit, which includes the Permagarden Technical Manual, Training Guides, Minimum Standards, and monitoring checklist. In addition, the SCALE Award is launching a permagarden foundations e-learning course in November 2022 (links to follow).