
1 Community mobilization and restoration planning

Experience has proven that the level of community participation in the early stages of restoration often determines its degree of success. Communities are central to the restoration process and should be directly involved in the selection of the village sites to restore, species selection, seed collection, and planting and management of the restored areas. Selection of the species used in restoration in particular should be carried out based on the community's needs and priorities, and in consideration of ecological adaptability.

Engaging with rural communities

Depending on the type of initiative and because resources are often limited, the villages and communities destined to benefit from a restoration initiative may require a selection process, which must be carried out according to criteria jointly agreed upon with the partner organizations. The criteria could include:

- the availability of degraded land to be restored in the villages;
- the motivation and commitment of community members to take part in restoration activities, including in-kind contributions such as land and labor;
- the non-existence of unresolved land issues and / or inter-village disputes;
- the pre-existence of community-based structure and organizations.

Communities have the right to give or withhold consent for any restoration project or development activities affecting them or their territories, and to conduct their own collective discussions and decision making independently. For restoration to succeed, an agreement on behalf of the local population for the undertaking of restoration work should be reached. The concerns of the community must be clearly understood and therefore consultation meetings with communities are essential, not only for an assessment of their commitment and motivation, but also for responding to their needs and requirements. Finally, the participatory assessments provide a better understanding of the needs and concerns of the communities. The Free, Prior and Informed Consent is an approach of critical importance that provides a set of principles guaranteeing indigenous communities their rights (FAO, 2016).

Selecting the restoration sites

The choice of restoration sites within a community should be the result of a collective decision-making process, and the ideal site for a larger scale intervention should be easily accessible to villagers. The restoration sites must not be too large for easier management, therefore, 50-100

hectares for a community or a village would be optimal. In fact, this area size, as opposed to a smaller size, allows for more cost-effective mechanized interventions (tractor, plough, transport and operators). A clear land tenure is a prerequisite for launching the restoration activities, hence, priority must be given to an agreement that clearly specifies the restoration objectives, the precise location of the sites to restore, and how to reach the restored sites within the village management committee. Box 1 provides specific guidance on how to select restoration sites.

BOX 1. Selection of restoration sites

SITES TO SELECT

- Areas of a maximum size of 50-100 ha/village, not necessarily in one piece
- Sites that are suitable for cultivation, grazing, or forestry
- Sites which are easily accessible by villagers
- Sites for which an agreement-in-principle of the local population has been reached to initiate restoration activities

SITES TO AVOID

- Land with unresolved land tenure issues or possible conflicts
- Areas that have gold (or other) mining potential
- Sites located on or close to transhumance routes
- Sites where other partners have started working
- Sites with public infrastructure
- Areas with rocky outcrops

Selecting and prioritising useful species for restoration

One of the key elements of a successful approach presented in this manual is the fact that the communities determine which species (of trees, shrubs and grasses) should be used for restoration, basing their choices on the utility of each given species. Questionnaire based surveys (as detailed in Part II of this manual. A sample questionnaire on species preferences is also provided in Annex 3) and focus group discussions serve as useful tools for collecting traditional or cultural knowledge on how species are currently being used, or were used in the past, as well as their presence/absence in the area. Indeed, traditional ecological knowledge is often poorly documented and sometimes can be identified only through local surveys.

Once the preferred species have been identified, a prioritization exercise is carried out by community members with respect to restoration objectives (often sylvo-pastoral, agro-ecology, agro-forestry or agro-sylvo-pastoral), their lifestyles, well-being aspirations as well as the how to generate income from their environment.

It is important to improve local knowledge and to establish preferences for species with accurate and up-to-date botanical and ecological analyses, given that some of the species chosen by community members may not be suitable for restoration in the targeted sites, as in the case of exotic species or species better adapted to humid environments. Native species should always be given preference, as they are well adapted to local ecological conditions and therefore more suitable for the natural re-establishment of the native flora and fauna species and enhance ecosystem resilience (Sacande & Berrahmouni 2018). Exotic species, on the other hand, may cause major environmental disruptions, especially the invasive species that compete with and/or replace the native species. These species can be used for other purposes, however, this is not advisable if the sustainability/resilience of landscapes is the targeted outcome.

It is recommended to maximize the diversity of planted species on a given site allocated for restoration, in order to maximize ecological functions and therefore build better resilience on the ground, for example, a minimum of 10-12 species planted per hectare, combining grasses, trees and shrubs.

Over 200 plant species have been identified as useful species to rural communities across GGW countries through household surveys, including at least 86 tree species. 50 of these species (trees and grasses) are being planted in the six AAD African countries. Figure 2 shows the top 32 preferred native tree species in the AAD project, ranked by percentage of use by households. The remaining 8 exotic tree species, shown in yellow in the diagram, are commonly used by rural households and although they are not planted for land restoration, some of the exotic trees may still be planted in home/nutrition gardens or agro-forestry systems.

Plant use data has also been recorded and used to classify species. Species with multiple uses and high market value were usually preferred, with the largest proportion of the given uses being respectively destined for human consumption or in veterinary medicine, food and livestock feed. *Acacia senegal* (also known as *Senegalia senegal*) for example, is a major restoration species with multiple uses, mainly for improving soil fertility and producing gum arabic, but also as a source of food, fodder and honey (NGARA, 2017; Sacande and Parfondry, 2018). The categories and proportions of the various uses of species selected and preferred by communities is presented in figure 3 (see also Annex 1) for the planted species, both grasses and trees.



GREAT GREEN WALL NURSERY,
AAD PROJECT, KOYLI ALPHA, SENEGAL

FIGURE 2. Main preferred tree species by households (AAD African countries)

A diversity and important plant species selected and used by AAD's rural communities for their livelihoods in eight African GGW countries (Burkina Faso, Ethiopia, the Gambia, Mauritania, the Niger, Nigeria, Senegal and the Sudan). Only native species are planted for restoring degraded lands in agro-sylvo-pastoral landscapes, while the exotic species are planted in home-gardens.

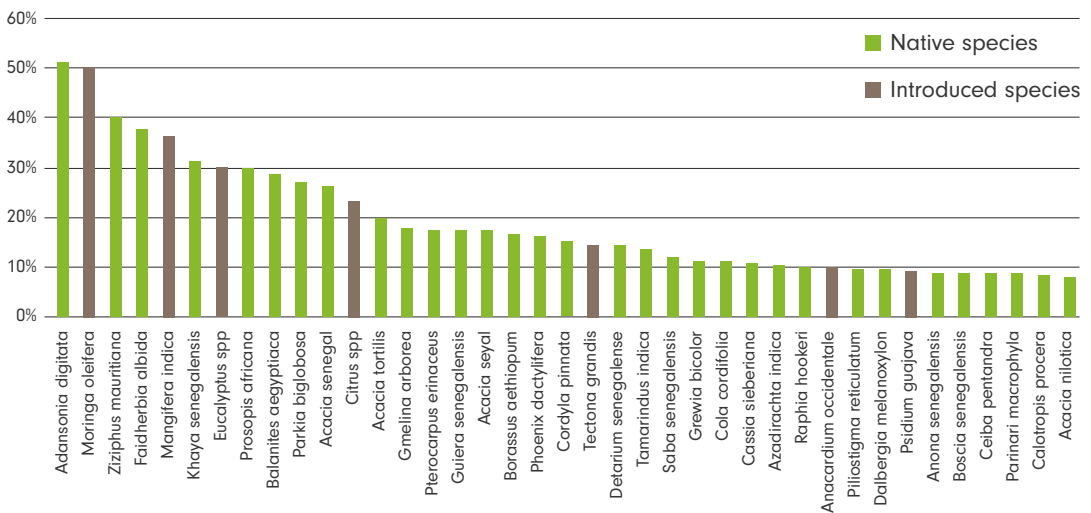


FIGURE 3. Classification of species by use category

Classification of species by use category defined by the rural communities in AAD intervention areas. Out of the 150 preferred species, most are multipurpose. Plants with high market value were usually preferred, with the largest proportion for human and veterinarian medicine, food and livestock feed.

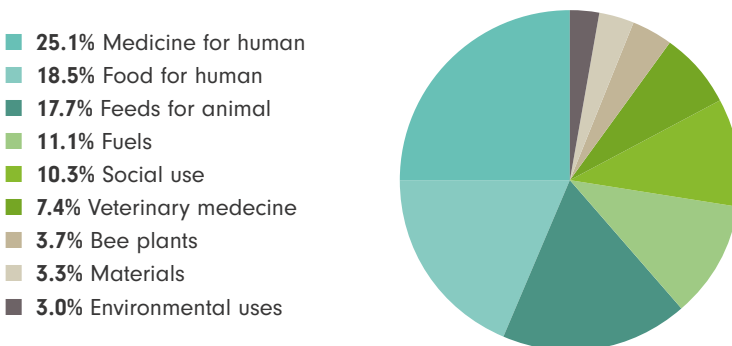
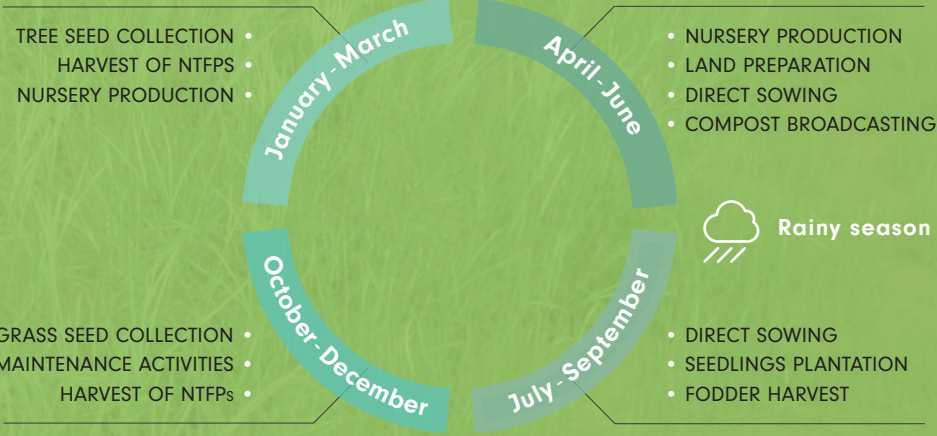




FIGURE 4. The restoration calendar



Planning restoration activities on the ground in the Sahel

The Sahel is characterized by a long dry season from eight to nine months and a short rainy season from three to four months. Land restoration, like rainfed agriculture, is closely associated with the seasonal calendar. The rainy season is relatively short, starting around June and ending in September, and planting should be carried out at the beginning of the rainy season to maximize plant growth when rainwater is available.

Planting activities are labor-intensive and very time-consuming. As a result, finalizing the planting activities within a short rainfall period while growing crops at the same time can be challenging. Hence careful planning is crucial so as to ensure that the appropriate species are planted in the right place and at the right time.

The geographical coordinates and surface areas are determined as soon as the sites have been selected, after which the following key elements can be determined:

- the quantity of seeds required (Section 2);
- the quantity of nursery seedlings required (Section 3);
- the workload required for land preparation (Section 4) and plantation (Section 5).

The restoration calendar (fig. 4) indicates how the main restoration activities are spread throughout the year.

KEY RECOMMENDATIONS CHAPTER 1

Gather information locally on the preferred local species and their uses and complement it with the appropriate scientific knowledge related to adaptability and propagation.

Carefully select a site of degraded land within the reach of the local community, with clear land tenure and with a manageable size.

Restoration starts well before planting; activities need to be planned well in advance so that planting can start as soon as the first rains have settled.



PREPARATION OF SEEDS FOR DIRECT SOWING,
AAD PROJECT, DJIBO, BURKINA FASO