

SUSTAINABLE STAPLE FOOD CROP SEED PROCUREMENT IN THE HUMANITARIAN CONTEXT

In most of the areas where we operate, which are suffering from a triple crisis of armed conflict, food insecurity and climate change, food systems are based on subsistence agriculture. In this context, in which access to markets is very limited or non-existent, food system resilience depends on the resilience of the seed systems that we're able to restore through humanitarian seed distribution.

The use of farm saved seed in the countries concerned typically varies between 95% for maize and rice and more than 99 % for important staple crops such as cowpea, groundnuts, sesame or millet. The replacement period of high-quality seed is between 20 and 100 years. Humanitarian seed distribution establishes the genetic basis of the restored local seed (and food) system for years to come, given the difficult if not impossible access of beneficiaries to high quality seeds.

WHAT SEED TO BUY

The future vulnerability or strength of a local food system depends directly on the seeds we distribute today. Given the high uncertainty of climate change scenarios combining erratic rainfalls and droughts, floods and extremely high temperatures, diversity becomes a main factor of resilience. It is not always possible to combine in the same variety resistance to high temperature, to drought and floods and to the new pests and diseases emerging from the changes in ecosystems. The required diversity includes inter and intra-crop diversity as well as intra-variety diversity. Not forgetting the greater resilience to climate-change events proven by local varieties in the last two decades. Inter-crop diversity also helps provide a balanced and complete diet, while intra-crop diversity offers resilience as well as potentially a range of essential micronutrients. Monovarietal crop systems are highly vulnerable. Finally, intra-variety diversity, working with composite and multiline varieties, variety mixtures or traditional varieties, provides not only for resilience but also for further improvement under the dominant on-farm (traditional) breeding regime.

We are obliged to procure seeds from fragile national markets, looking for registered varieties with proven adaptability to local conditions. The fact that, for staple food seed crops, agricultural seed is indistinguishable from food grain, means that for every true seed there are hundreds and thousands of potentially uncertified ones. Uncertified seed trade is very widespread in fragile contexts, and severely hampers local seed-sector development. The only real guarantee of quality in seed markets is a certification label on the seed package certifying varietal identity and purity.

AVOIDING UNCERTIFIED SUPPLIERS

The cost of producing seed is 3 to 5 times higher than the production cost of indistinguishable grain. When demand is uncertain, the seed producer will not risk producing more than he can sell, otherwise he will be forced to sell it as grain and lose money. International organizations usually appear on the scene without prior notice, demanding large quantities of seeds, which can only be obtained in the short term from non-licensed suppliers - commonly grain merchants- thus fulfilling their needs in achieving objectives. Seeds are always



produced in the preceding season; therefore, availability is not immediate: it requires forward planning.

Our procurement can only take place within the frame of the legally regulated market, supporting seed certification systems. There is no other way of ensuring that the seed we are distributing has the necessary genetic identity, the yield potential, disease resistance, or drought and heat tolerance. Providing non-certified seeds highly increases the vulnerability of local food systems and severely hampers development of the local seed sector. And respect to local laws: offering for sale non-certified seed of staple food crops is forbidden under common seed market regulations.

In our operational contexts, international assistance for seed represents up to 90% of the demand. Buying non-certified seed destroys the seed supply value chain. The main problems are as follows:

Professional seed producers cannot compete with uncertified seed prices and end up selling the seed as grain or using it as animal feed.

Research Institutes do not receive economic returns from the sale of basic seed and developing new varieties, and

The regulatory agency lacks the income to keep its staff and laboratories working.

Current support of ICRC to seed sector to assure seed availability in armed conflict areas.	
NARO basic seed production	Chad, Cameroon.
NARO variety adaptability testing	CAR, Chad.
NSA seed certification	CAR, Chad, Cameroon, Mali.
Seed producers	CAR, Chad, Cameroon, Mali, Somalia, Niger.

NARO: National Agricultural Research Organization
NSA: National Seed Authority

Availability of seed for humanitarian distribution often requires additional support to some or all of these three main links of the value chain. If properly certified seed is not available, it's important to avoid distributing seed whose genetic identity is unclear, as the receiving beneficiary will probably have little chance of replacing it in the short term

POLICIES ON SEED TREATED WITH SUBSTANCES HARMFUL TO HUMAN HEALTH AND THE ENVIRONMENT

In fragile contexts, pesticide impact assessment capacities are very low or most probably inexistant. Generally speaking, the harmful effects of locally registered pesticides on human health and the environment are insufficiently evaluated. Seed treatment with chemical pesticides should be avoided if at all possible.

An alternative is fumigation before final packaging in strong, airtight, heat-sealed polyethylene bags to prevent insect propagation. 'Solarization' (exposure to sunlight under a plastic sheet) of vegetable seed nursery substrates also helps prevent fungal development. If a chemical pesticide is to be used for seed treatment, we recommend using only pesticides at the same time



ICRC

permitted both in the European Union and in the country of distribution. Treated seed should be handled with the correct use of PPE (especially gloves) and information on the proper handling and disposal of left-over seed and packaging provided. The brochure on how to handle treated seeds, is available in these two formats: a [printable leaflet](#) in pdf or a [web format](#).

GOOD SEED PROCUREMENT PRACTICES

1. Read and study the national seed law and regulations.
2. Request seed stock availability from the National Seed Authority by variety and producers, to formulate and verify your demand. This is seed produced the preceding year in areas with one main cropping season, or in the two preceding seasons in tropical cropping systems
3. On the basis of available varieties, provide for diversity, resilience to climate change and to pests and diseases.
4. Do not try to access more than a reasonable percentage of the national availability of a given variety, or of the stock availability of a given seed producer.
5. Invite only seed producers with stocks confirmed by the National Seed Authority.
6. Check for final acceptance, seed lot certificates and official certification labels in all packages. Request verification by NSA inspector of seed lot certificates and certification labels.
7. Strong collaboration between departments in the same organization (i.e. Assistance & Procurement) as well as with other stakeholders (i.e. Ministries, Plant Breeding Institutes, etc.) are key in the success of these programs.

Juan Ignacio Trives Pire
ICRC global seed procurement manager
February 2023