Food and Agriculture Organization of the United Nations

2016 INTERNATIONAL YEAR OF PULSES

PULSES CONTRIBUTE TO FOOD SECURITY

AFFORDABLE SOURCE OF PROTEIN AND MINERALS

In many countries meat, dairy and fish are expensive and thus out of the reach of many, especially the poor. These populations therefore depend on plant foods to cover their protein needs. Protein and energy deficiencies, in both quantity and quality, are often the culprit for widespread malnutrition, which is manifest in the form of stunting or wasting. In addition, iron deficiency is an important micro-nutrient deficiency worldwide, especially for people who do not have access to balanced diets.[2] These issues are further compounded as the world's population is growing rapidly and agricultural production must intensify accordingly, if it is to meet global food needs. However, increases in agricultural production must also be sustainable. Pulses can be cultivated as cash crops, meaning they are sold in markets, or grown for food for the smallholder

SPLIT PIGEONS PEAS (CAJANUS CAJAN)

FOOD SECURITY IS DEFINED AS: "A SITUATION THAT EXISTS WHEN ALL PEOPLE, AT ALL TIMES, HAVE **PHYSICAL, SOCIAL** AND **ECONOMIC ACCESS** TO **SUFFICIENT, SAFE** AND **NUTRITIOUS FOOD** THAT MEETS THEIR DIETARY NEEDS AND FOOD PREFERENCES FOR AN ACTIVE AND HEALTHY LIFE".[1]

farming community, paired with or in rotation with other crops.
Pulses are an important source of accessible protein, especially for the smallholder farmers who consume part of their agricultural produce. In fact, the protein obtained from pulses is significantly less expensive compared to animal foods. In some countries, pulse protein costs much less than the protein sourced from milk. Additionally, the iron absorption of pulses and the protein quality of the diet are enhanced when pulses are eaten with cereals and vitamin C rich foods.[3]

LOW FOOD WASTAGE FOOTPRINT

Food waste is one of the main problems related to food security. It is estimated that one-third of the food produced for human consumption worldwide is lost or wasted.[4] Through the entire agricultural supply-chain, losses and wastage occur. In developing countries, most losses occur during production or transportation while in developed countries, a large proportion of food is wasted at the consumption stage.[5] Since pulses are shelf stable, the proportion of food waste at the consumption stage due to spoilage is very low and thus, a very good option to ensure household food security.

KEY **FACTS**

➤ Pulses are an **affordable source of protein and minerals** for a large proportion of rural populations in the world.

➤ Pulses have a **long shelf life**, which means they can be stored for long periods without losing their nutritional value.

➤ Many pulses are **drought-resistant** and are suitable for marginal environments.

SUITABILITY OF SOME PULSES FOR MARGINAL AREAS

There are many drought-resistant pulses, such as pigeon peas (*Cajanus cajan* (L.) Huth), bambara beans (*Vigna subterranea* (L.) Verdc.) and lentils (*Lens culinaris* Medik.). These pulses can be cultivated in arid climates that have limited, and often erratic, rainfall of 300-450 mm/year. These are lands where other crops can fail or produce low yields. Additionally, drought-resistant and deep rooting species such as pigeon peas, are not only able to improve food security and nutrition of farmers in marginal environments, but pulses can also supply groundwater to companion crops when planted in intercropping systems.[6] Therefore, people living in dry environments, where food security represents a huge challenge, can intensify their production systems in a sustainable manner using locally adapted pulses. Nevertheless, appropriate policies and programs to support both the marketing of pulses in local trade systems and modern consumption habits, must also encourage production systems for pulses, in order to increase the availability and consumption of drought-resistant pulses.
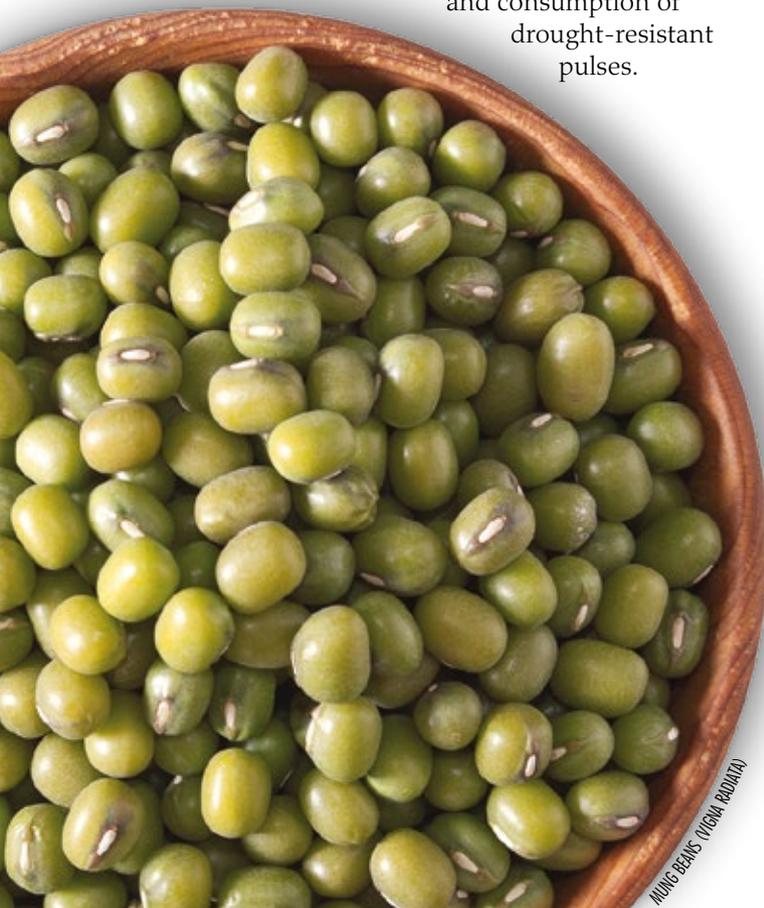
THERE ARE MANY COUNTRIES WHERE MALNUTRITION IS A PARTICULARLY IMPORTANT ISSUE AND **LARGE REGIONS** OF THESE COUNTRIES **COULD BE USED TO PRODUCE PULSES**. THUS, THE PRODUCTION OF PULSES IN THESE REGIONS CAN HELP **INCREASE FOOD AND NUTRITION SECURITY**.

MORE CROP PER DROP

When mung beans (*Vigna radiata* (L.) R. Wilczek) are introduced in rotation with winter wheat and cotton during the short fallow period, farmers obtain an income increase from US$1384 to US$2907 from 0,5 ha of land.

Source: ICARDA

LONG SHELF LIFE

If properly stored, pulses remain edible for several years. Farmers have learnt to store pulse seeds with low water content, in dry places, and to discard those seeds that have been attacked by insects or have spoiled. Additionally, pulses show orthodox seed storage behaviour, meaning that they are seeds that are able to germinate after being stored for a long period. In some cases, farmers can store their pulses and then plant them in subsequent cropping seasons.

MUNG BEANS (VIGNA RADIATA)

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[5] Gustavsson J; Cederberg C; Sonesson U; van Otterdijk R; Meybeck A (2010). Global food losses and food waste. Food and Agriculture Organization of the United Nations, Rome.

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