

Germplasm-Collection of Local Vegetable Varieties –

Treasure for Income Generation and Food Diversification in the Uplands of Lao PDR



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Introduction

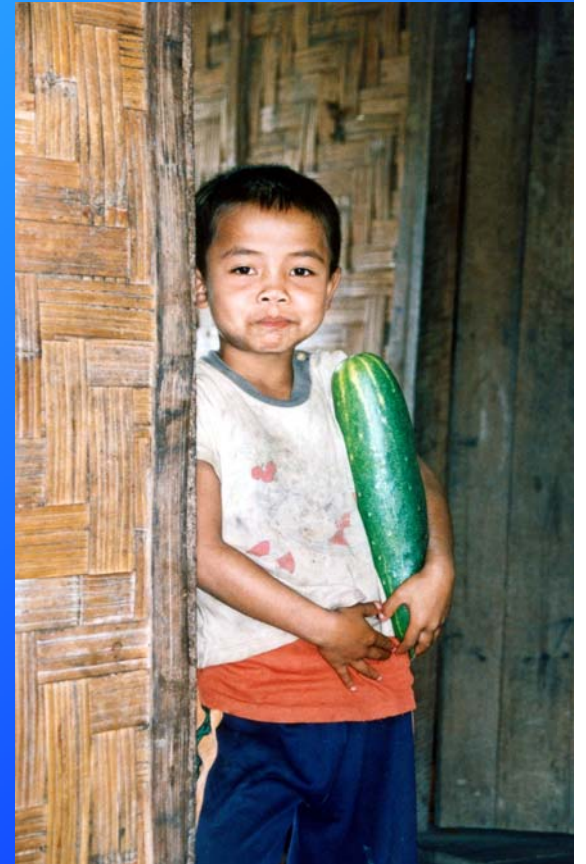
- A 24 hours consumption survey shows, a total of 96 different food items are consumed and 48 of them are vegetables.
- On average, each family member consumes 11 different food items, 5 of them are vegetables.

(Siphandouang et al, 2002)



Advantages of Vegetables:

- Healthy food and major source of vitamins A and C; one of the most important source of calcium, iron, vitamin B₂
- Diversify the diet
- Improve nutritional status and lead to better health conditions
- cheapest source to balance micronutrients deficiencies
- Market potential for income generation



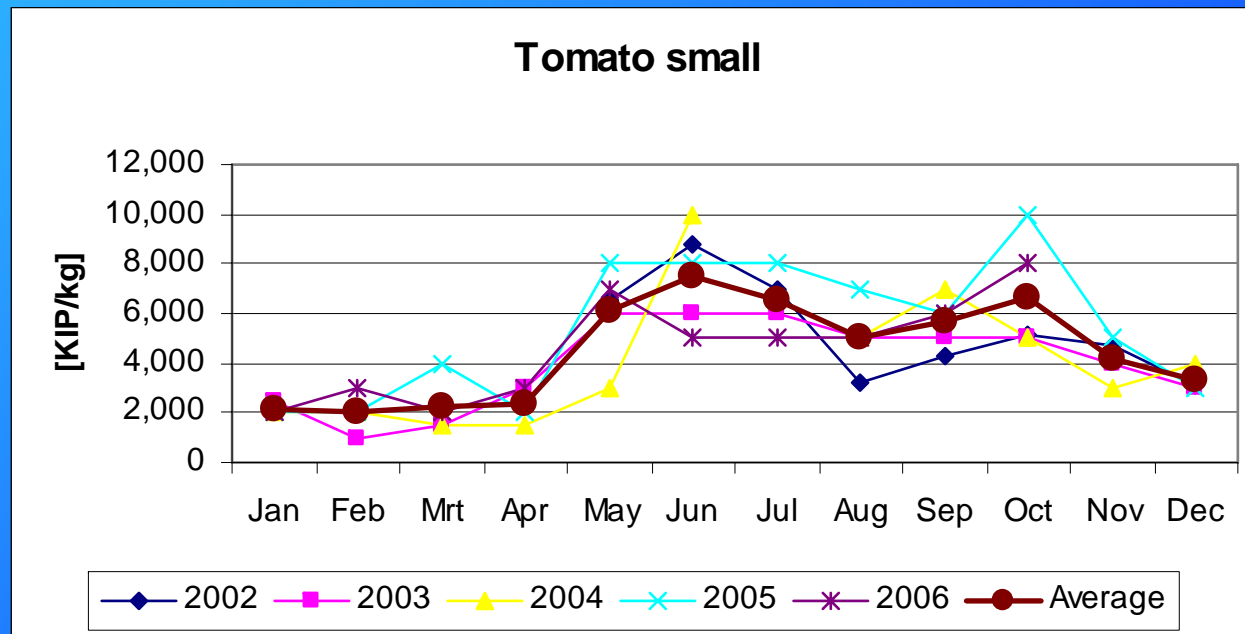
Where are vegetables grown in Lao PDR?

- at permanent home gardens
- at riverbank gardens during dry season
- on irrigated fields
- in mixed cropping systems with upland rice (“hay”)

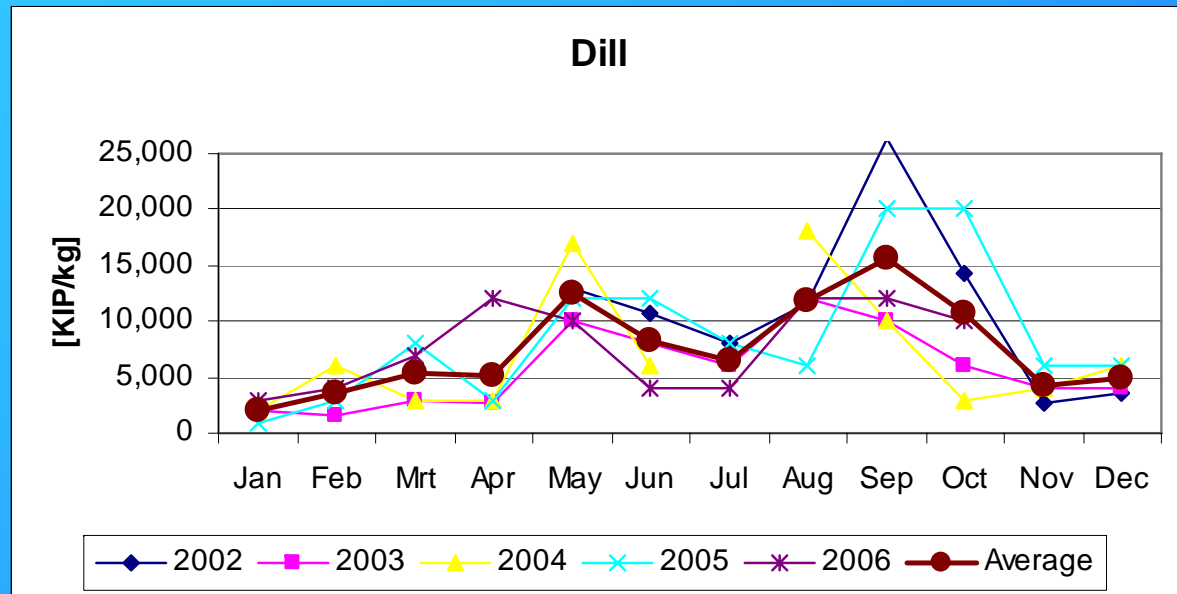


Market potential of fresh vegetables

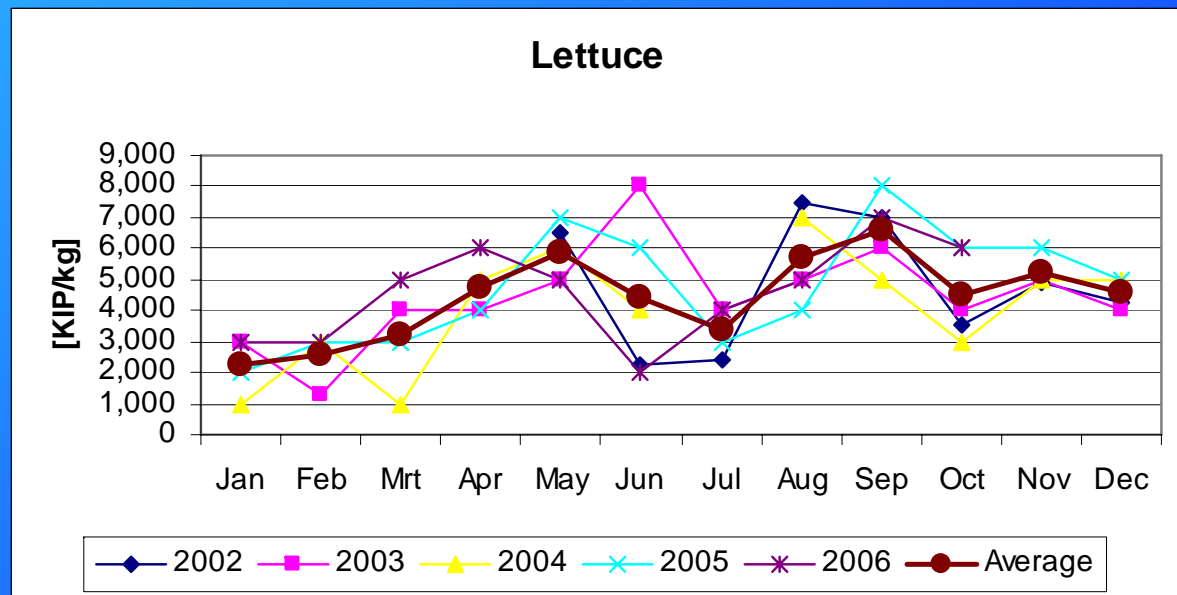
- Prize analysis was done over 5 years for 40 crops at Vientiane market
- Most vegetables are growing between September – January and harvested between January – April
- Creates a strong seasonality in supply and prices
- Prize differences between dry- and rainy season in average 390 % for Tomato



- Market analysis for upland conditions should be focused on in future



Prize differences 780% for Dill



Prize differences 290% for Lettuce

Vegetable Seed Production

Potential:

- Open pollinated varieties, adapted to upland conditions, produced in mountainous areas
- supply the local market
- substitute imports
- export potential to neighbor countries
- benefit from very good experiences with contract seed production around Vientiane

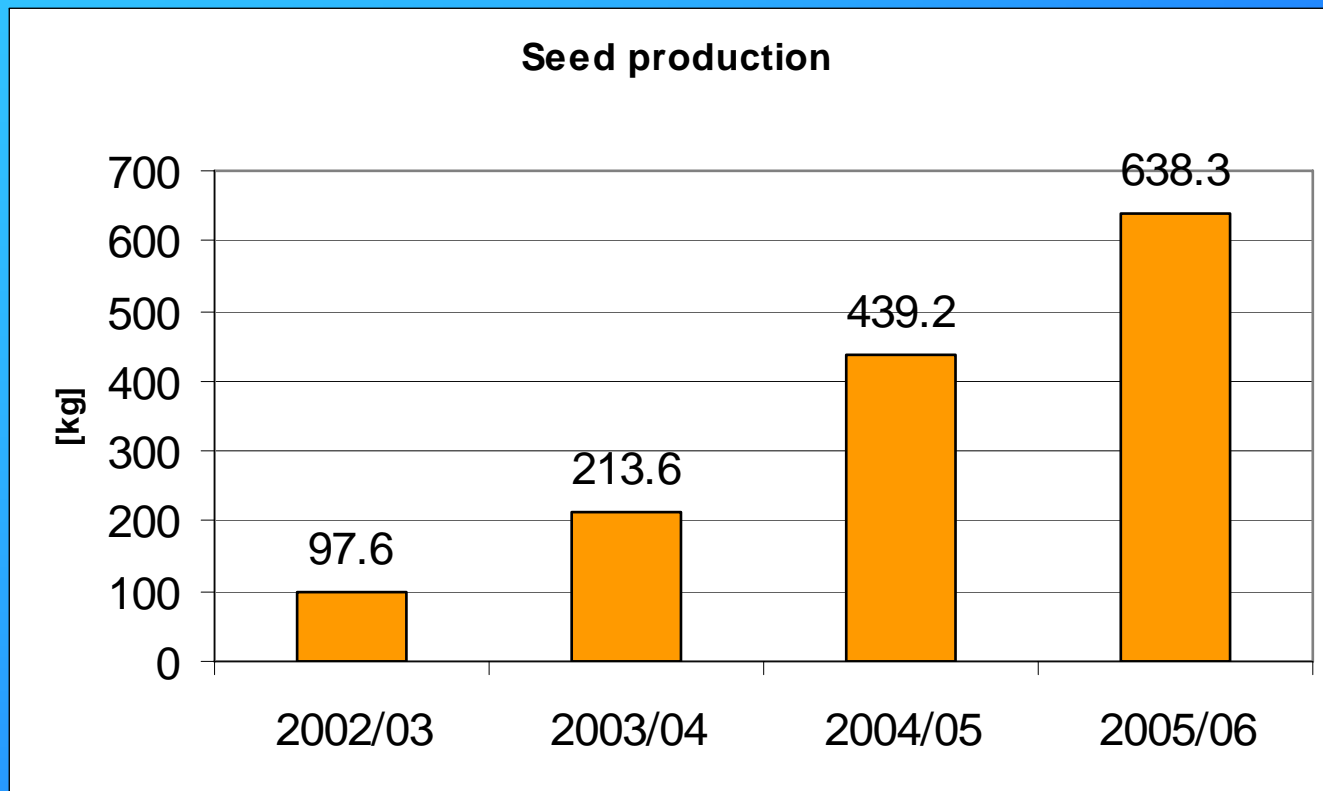




Experiences with Vegetable Seed Production

- starting 2002
- Farmers' network of 23 farmers in 11 villages in 4 districts
- 44 contracts for seed multiplication of 18 crops
- Monthly follow up
- Annual evaluation meeting
- Establish a seed fund for financing
- Quality testing of seeds at HHRC

Experiences with Vegetable Seed Production around Vientiane



- Average additional income per farmer: 1.4 Mill KIP

Marketing Experiences

- Packing of seeds with HHRC-Logo & Label with information about quality, origin and cultivation
- 431 kg vegetable seeds sold (2004/05)
- provided seeds to 14 Provinces in Lao PDR



Most important crops:

- Chinese Mustard, Pakchoi, Yard long bean, Cucumber, Eggplant, Tomato, Lettuce



Biodiversity of local varieties

- Lao PDR is a primary centre of origin and diversity for cultivated rice and several other crops
- Very little characterization, development and conservation efforts have been undertaken for crops, that are traditionally used by farmers
- Improved management of agrobiodiversity is the only option to achieve food security and reduce poverty

National Agricultural Biodiversity Programme
Lao PDR 2004



Biodiversity of local varieties

- Between 2002 and 2006 the HHRC-research team conducted 9 collection trips of local varieties
- visiting 281 villages of several ethnic groups in 76 districts of all 17 provinces and one Special Zone in Lao PDR



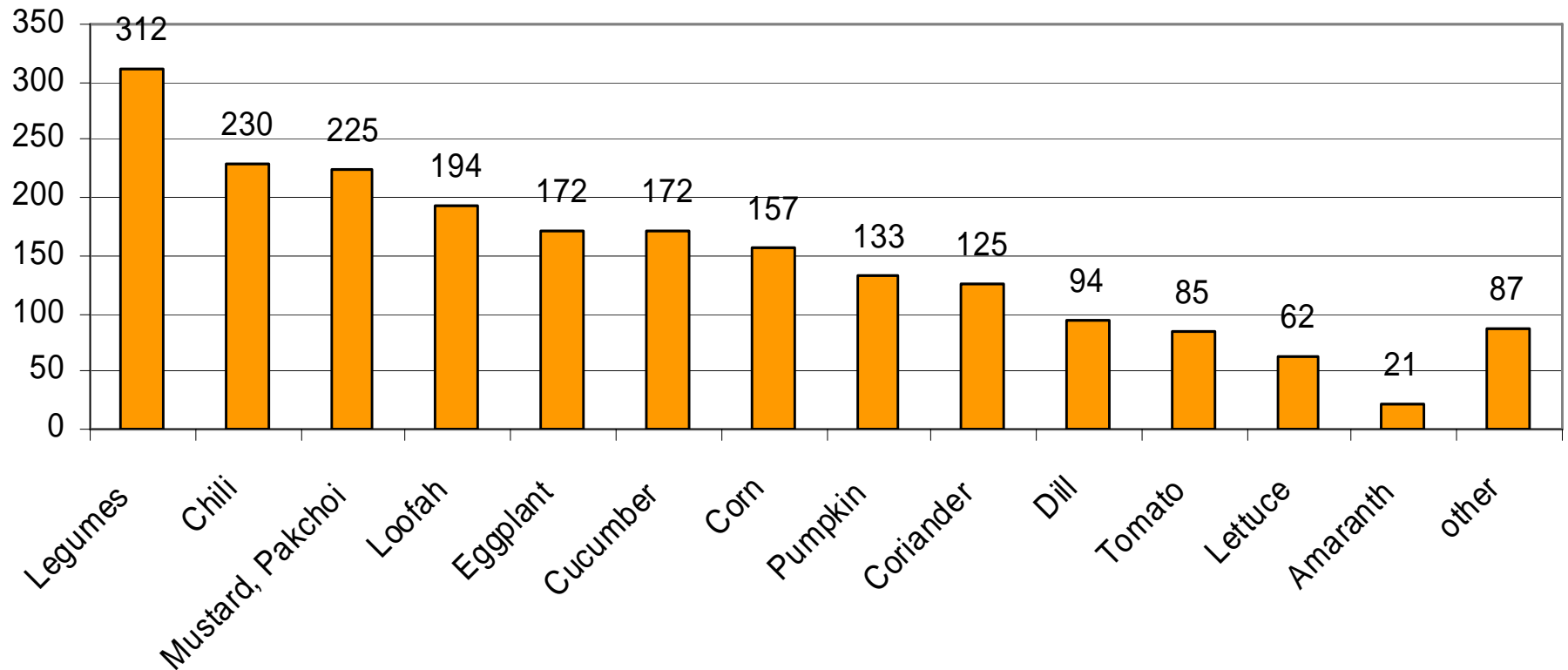
Results of Germplasm Collection

- Establishment of a vegetable Genebank at HHRC
- total 2.140 accessions
- stored at 5 grd fridges
- Documentation of passport data, like village, district, province, farmers name, ethnic group, local name of the crop in a database

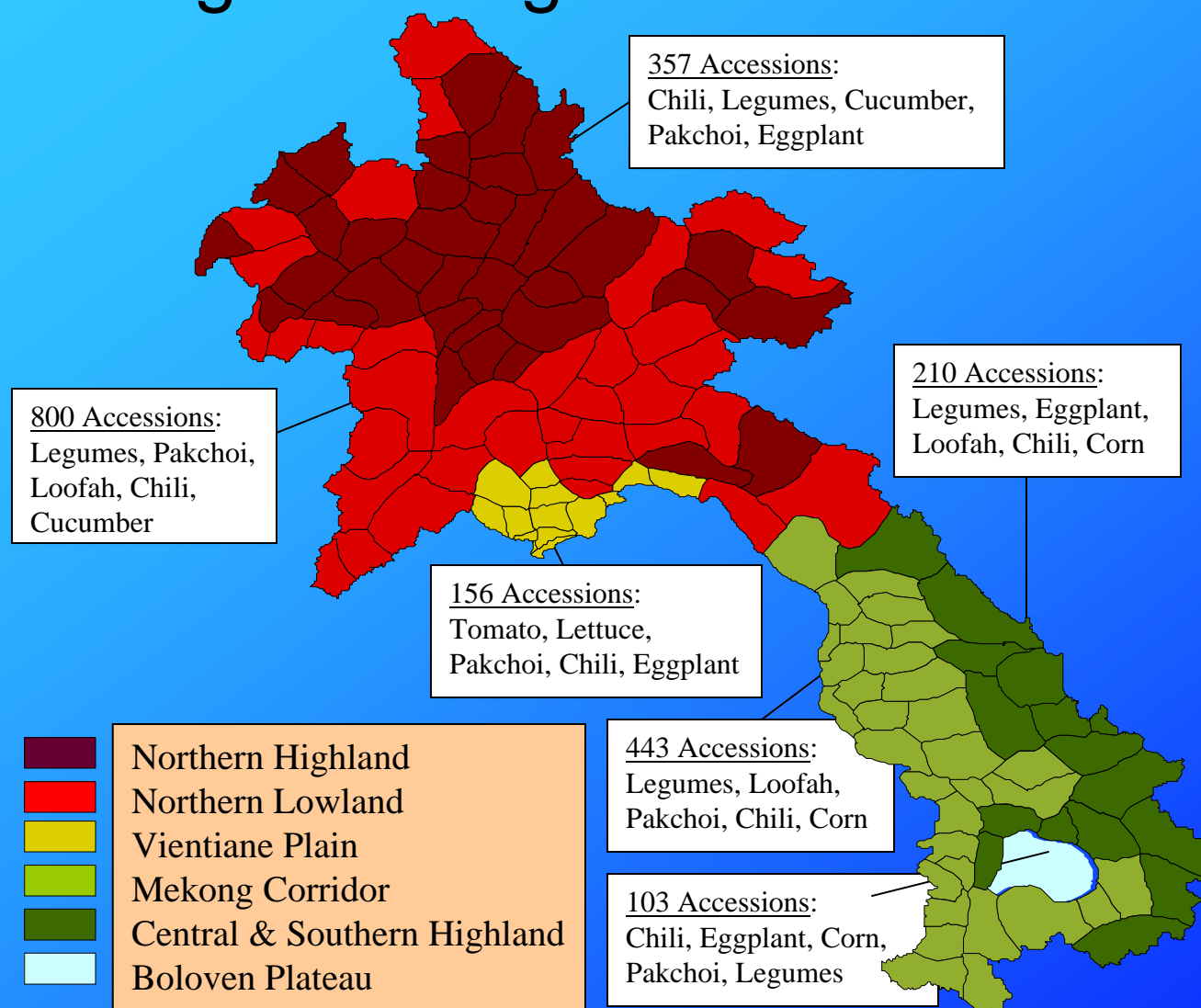


What to find at the genebank?

Number of Accessions at Genebank HHRC



What kind of vegetables do farmer grow in several Agro-ecological zones?



Map from Rural and Agriculture Sector Issues Paper, World Bank 2006, changed

How to use the genebank material?

- Screening and variety tests for chili, tomato, lettuce, yardlong bean and cucumber at HHRC and farmer plots



How to use the genebank material?



- Detailed description of eggplant biodiversity in Lao PDR is under research at HHRC



How to use the genebank material?

- Releasing new varieties for seed multiplication to Lao farmers, e.g. 2 Tomato varieties for off season production (HHRC 5, HHRC 6)



Future Outlook

- Screenings and vegetable trials should be conducted in the Northern provinces, to identify varieties suitable for upland conditions – in cooperation with HHRC
- The genebank offers the opportunity to exchange upland collected varieties among different mountainous areas in Lao PDR
- Introduction of successful crops from other regions

Summary

- Vegetables are a valuable source of nutrition
- Vegetables generate income as fresh and processed products and seed production
- There is a domestic market for local vegetable seeds, responding to the food preferences of Lao people
- Substitution of seed imports
- Local varieties should be conserved, documented and used for farmers
- Lao seeds for Lao farmers





Thank you very much
for your attention!

Questions and
comments are most
welcome!