

## **Agrobiodiversity is essential for coping with climate change**



## **Biodiversity - the dimension**

### ***Diversity of species:***

- 13 million species of animals, plants and micro-organisms
- 7000 cultivated plant species
- 120 plant species important for food and agriculture
- 30 crops provide 95% of food (energy and protein)

### ***Intra species diversity in agriculture:***

- 4,000 potatoe “varieties”
- 100,000 rice “varieties”

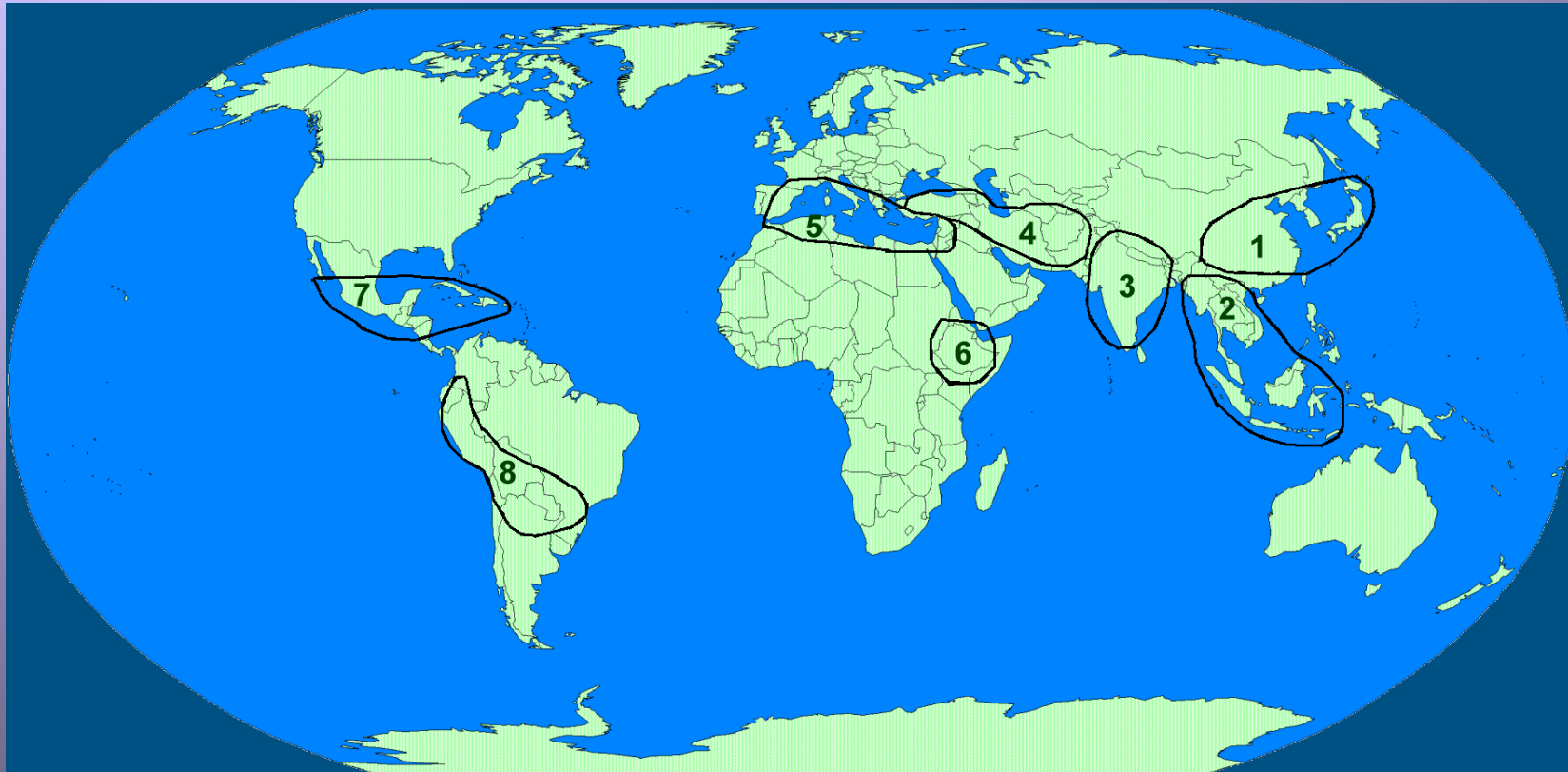
### ***Dramatic loss of agric.diversity:***

- Estimations: 3/4 of agricultural plants are lost

## Conservation with focus on tropical countries

- Highest Diversity in tropical regions
- Tropical countries are particularly affected by climate change

## Diversity is concentrated in the tropics

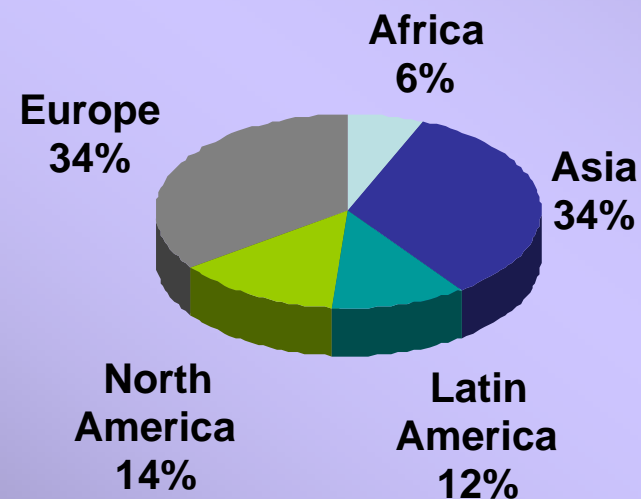


## Impact of climate change on agriculture is highest in tropical countries

- rising temperatures
- less rainfall
- increasing seasonal and regional irregularity of rains
- increased UV radiation

## Present conservation approach “from the field to the fridge”

a) 1300 national gene banks with 5,5 million accessions



b) 12 international gene banks with 0,6 million accessions



## Shortcomings of *ex-situ* gene banks

### *Technical and organisational problems:*

- Long-term storage often insecure (electricity shortage)
- Difficulties in seed drying
- Backlog of timely regeneration very high

### *What is being conserved?*

- Cereals 40%, tubers 4%, almost no medicinal plants
- 48 % advanced cultivars, 15% wild plants and crop relatives
- 35% is unique, the rest are duplicates

Source: FAO 1998: report on the State of the world's Plant Genetic Resources

## How much can and shall be saved?

- Conserve as much as we can, because future needs are unknown.
- at the lowest possible public cost

### *The consequence:*

- Emphasize on-farm conservation, supplemented by gene banks



## Adaptation to environmental change

- Exposure to the environment is indispensable
- Systematic breeding to cope with environmental stress,
- Adaptation has a social dimension



## Who can do the job?

Civil society organisations have a front runner position in concept development at farmer's level:

- Enhancing farmer initiatives on Organic Agriculture and Biodiversity conservation,
- Combine seed conservation with political empowerment
- Creating an alternative seed market (mainly in Europe)

## Organic Agriculture and ...



... conservation of local seeds



*Climate Change and Organic Farming - Workshop Biofach, Nürnberg 21.2.08*

## Seed conservation and political empowerment



*The Role of Agrobiodiversity for Adaptation to Climate Change - Johannes Kotschi*

*Climate Change and Organic Farming - Workshop Biofach, Nürnberg 21.2.08*

## Alternative seed companies creating diversity



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Thank You !

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