



# Local Investments for Climate Change Adaptation

## *Green Jobs through Green Works.*

National Conference on Climate Change and Green Jobs

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# Objective

Introduce an approach that helps communities (and local governments) to adapt to changes in local weather patterns and which generates income and other benefits for poor people

## ILO's role

Provide guidance in the identification, design and implementation of interventions in support of climate change adaptation at the local level, using a local resource-based approach for infrastructure development, which adds value by using environmentally-friendly methods for constructing and maintaining assets, while providing employment opportunities and enhancing the capacity of governments, contractors and communities

# ILO work experience with this approach

Optimize and combine the use of local resources in public works and infrastructure development, operation and maintenance.



Since 90's in Nepal (MoL , MLD, DoLIDAR)

# Climate Change

- Many poor and vulnerable communities are likely to suffer (disproportionally) from changing weather patterns
- Climate change will impact on their water supplies, flood risks, health, crop yields and livelihoods, living conditions and transport
- Efforts to reduce the impacts of climate change should equally focus on these poorer communities and help them to adapt to new living and working conditions
- Infrastructure investments and public works can play a major part in local adaptation to climate change (to reduce the vulnerability of natural and human systems to climate change effects/lessen the impacts)

# Adaptation to Climate Change



Fishing on a flooded road in Dhanusha district

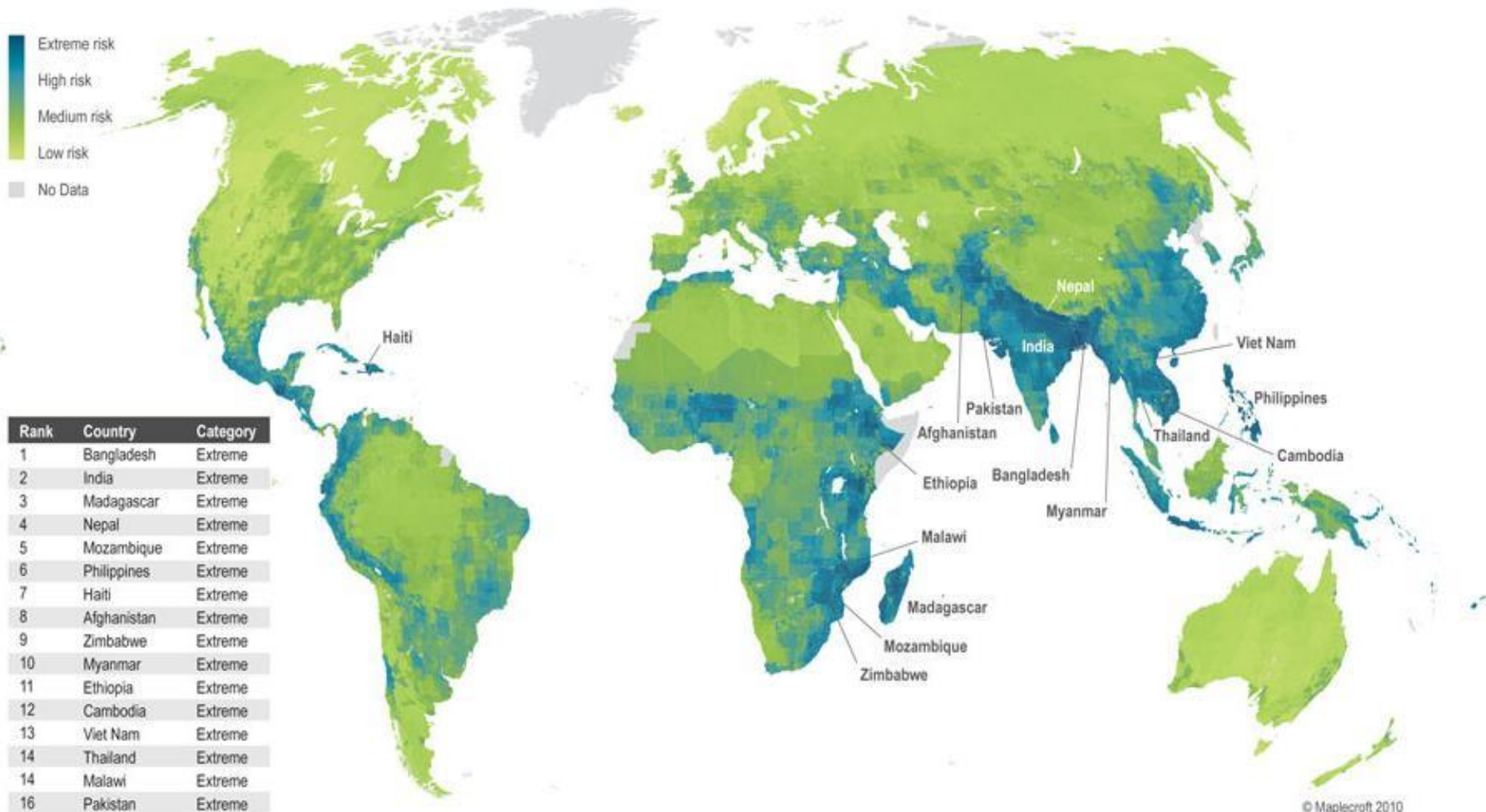
# Adaptation to Climate Change



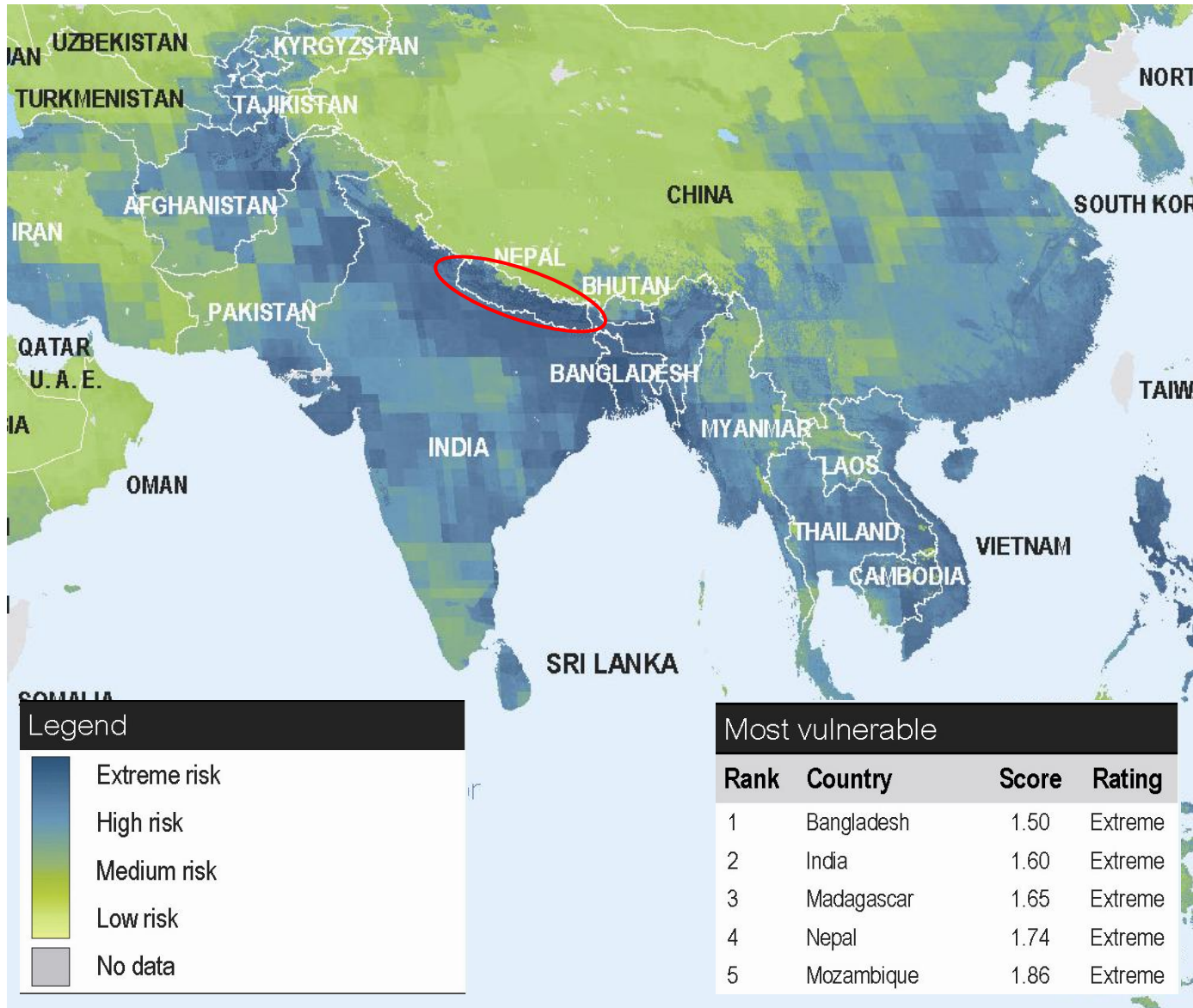
Interventions to reduce and/or mitigate the effects of climate change  
Creation of jobs and incomes

**Green Jobs through Green Works**

# Climate change vulnerability



# Climate change vulnerability

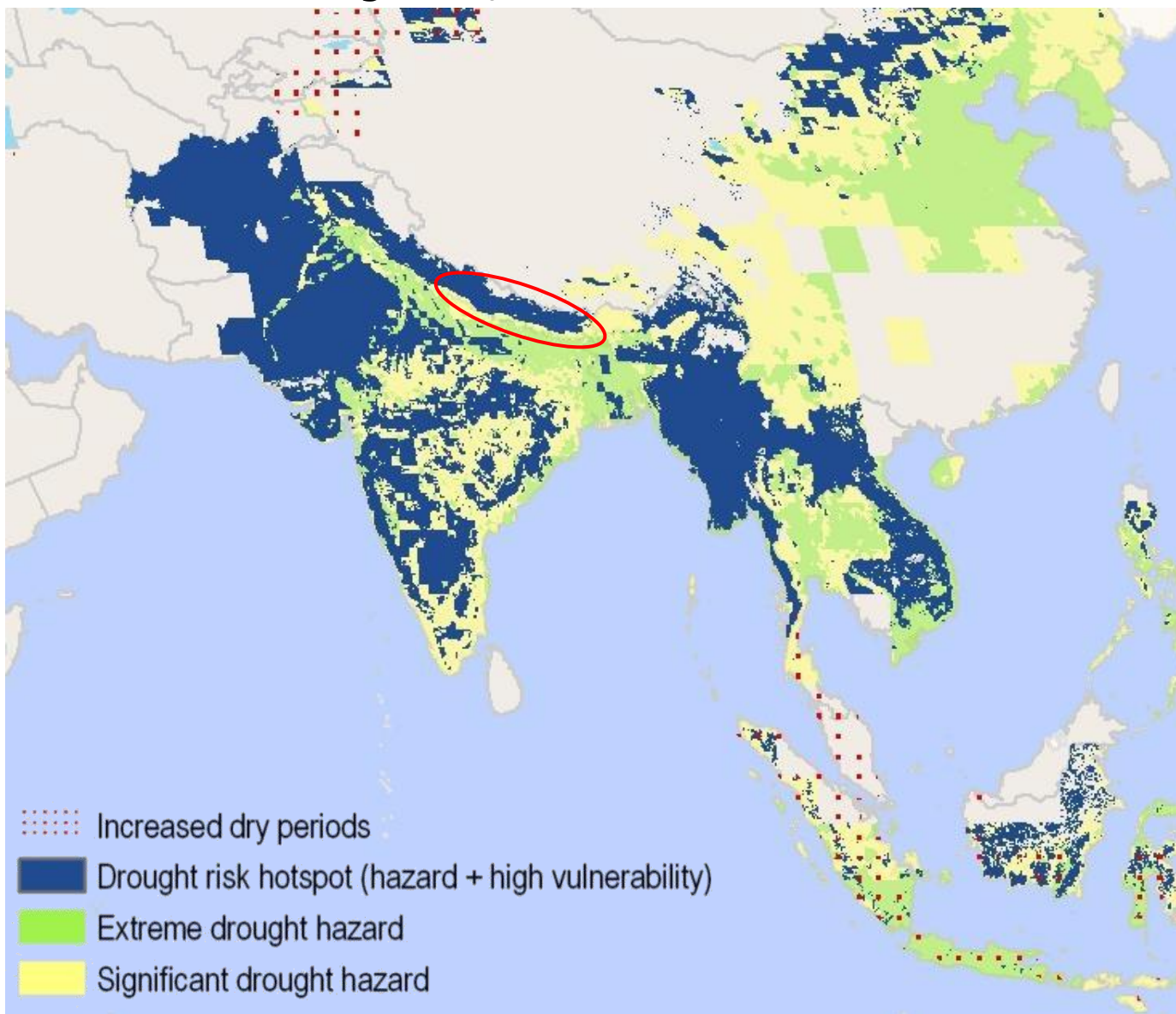


Source:  
Maplecroft



# Drought risk

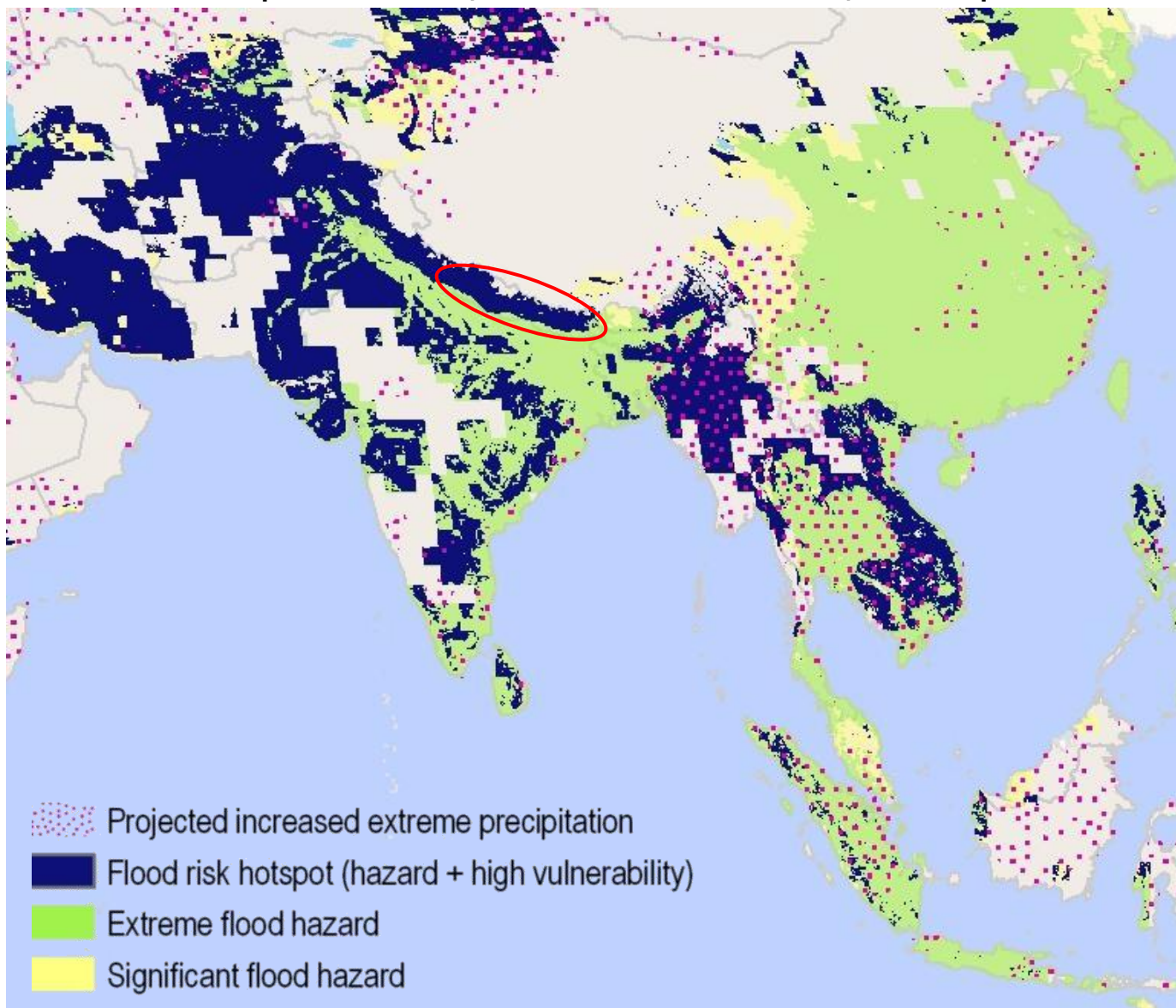
Irrigation, water conservation



Source:  
CARE

# Flood risk

Flood protection, soil conservation, transport



Source:  
CARE

# Reducing vulnerability

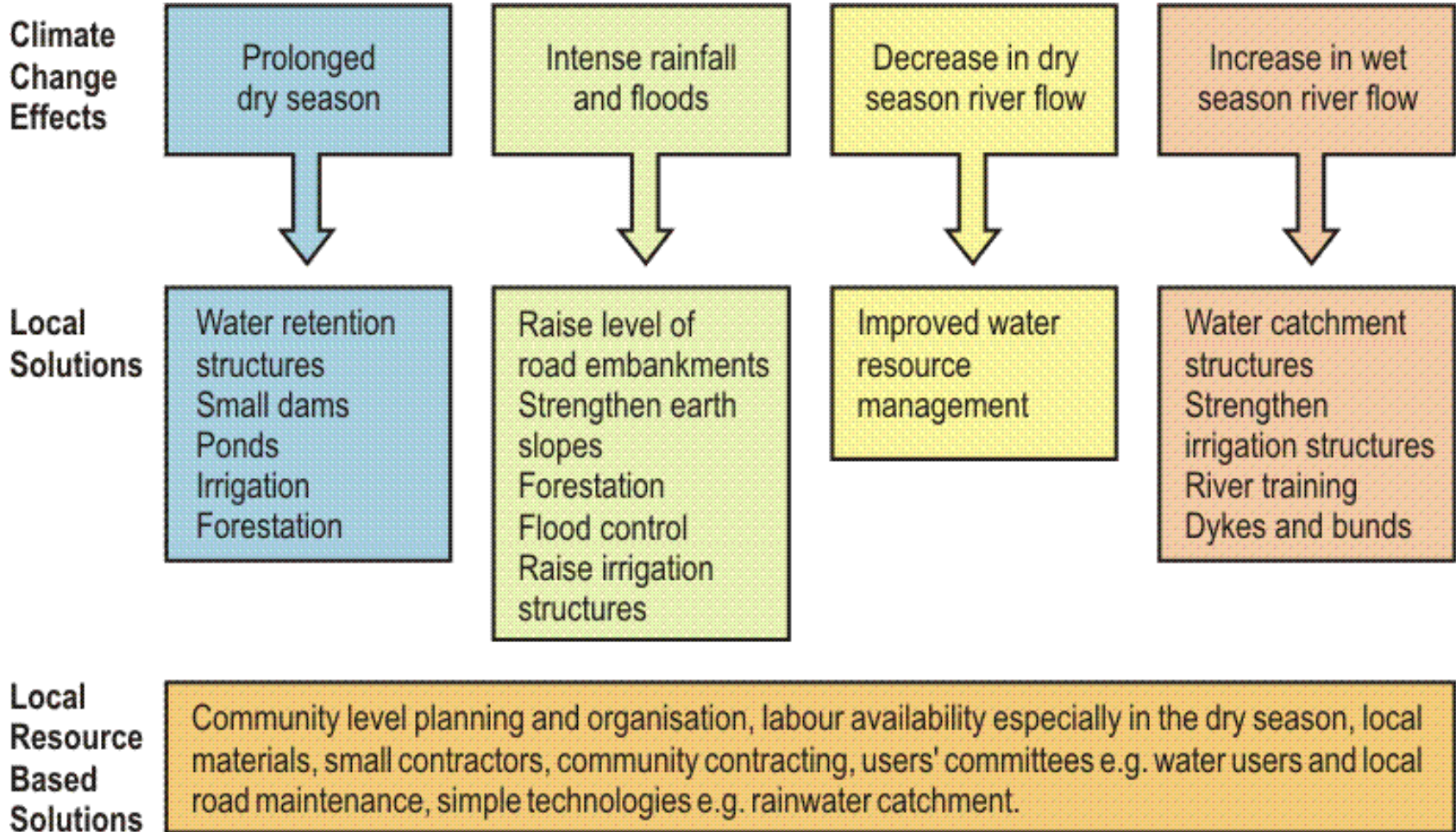
- Reduce vulnerability and adapt to changes in climate through local resource-based works
- Local resource-based methods can be used in:
  - Irrigation
  - Soil and water conservation
  - Forestation
  - Flood protection
  - Sustaining rural transport
- ... an important win-win opportunity in addressing climate change, poverty reduction and employment creation in an integrated way....

# Reducing vulnerability

- Local resource-based approaches can be used for development and implementation of works
  - ➔ more environment friendly construction methods, less equipment, more local materials, greening...
  - ➔ smaller footprint
- Such approaches can thus be developed as a “green approach” with additional benefits (income, skills, organizational capacity) for communities while adapting to changing local climates

➔ **Green Jobs through Green Works**

# Reducing vulnerability



# Irrigation

- Changes in local climates: higher temperatures, more concentrated rainfall, longer and more severe droughts, melting of glaciers and risk of seasonal rivers, affecting supply and demand for irrigation water
- Interventions: expand irrigation area, improve water storage, increase irrigation efficiency, reduce flood related damage
- Employment: construction, improvement and maintenance of reservoirs, dams and canals



# Irrigation

- Example: Dhanusha district – Secondary canals and irrigation structures
  - 28,700 (green) workdays
  - 500 workers (\$ 4.8 USD per workday created)
  - USD 135,574 (canals to irrigate 210 ha)



# Soil and Water Conservation

- Changes in local climates: more concentrated/intense rainfall (erosion), longer and more severe droughts (water shortages)
- Interventions: slow down run-off top soil, increase water storage: vegetation and soil management, contour banks, waterways, dams, ponds, river bank protection
- Employment: planting, soil protection works, construction, improvement and maintenance of physical structures





# Soil and Water Conservation

- Example: Dhanusha - Riverbed and embankment works
  - 22,600 (green) workdays
  - 600 workers (\$5 USD per workday created)
  - USD 112,800 (improving 16 sq km watershed)
- Example: Ponds/reservoirs (NREGA)



# Forestry

- Changes in local climates: changes in rainfall, higher temperatures affect forests, however link is more complicated: mitigation and adaptation.
- Interventions: afforestation, reforestation and revegetation (ARR) – new livelihood opportunities (adaptation).
- Employment: nurseries, planting, community forest management (income: firewood, fodder trees, fruit trees, wood)



# Forestry

- Example: Dhanusha district - bio-engineering components (agro-forestry and slope/embankment grassing)



# Flood Protection

- Changes in local climates: more and more intensive rainfall, increased water volumes, initial melting of glaciers, water level rise increases flooding (risks).
- Interventions: dykes, floodwalls, storm drains, river training, bank protection, channel improvement, flood mitigation reservoirs, raising houses, raising villages
- Employment: construction, improvement, maintenance



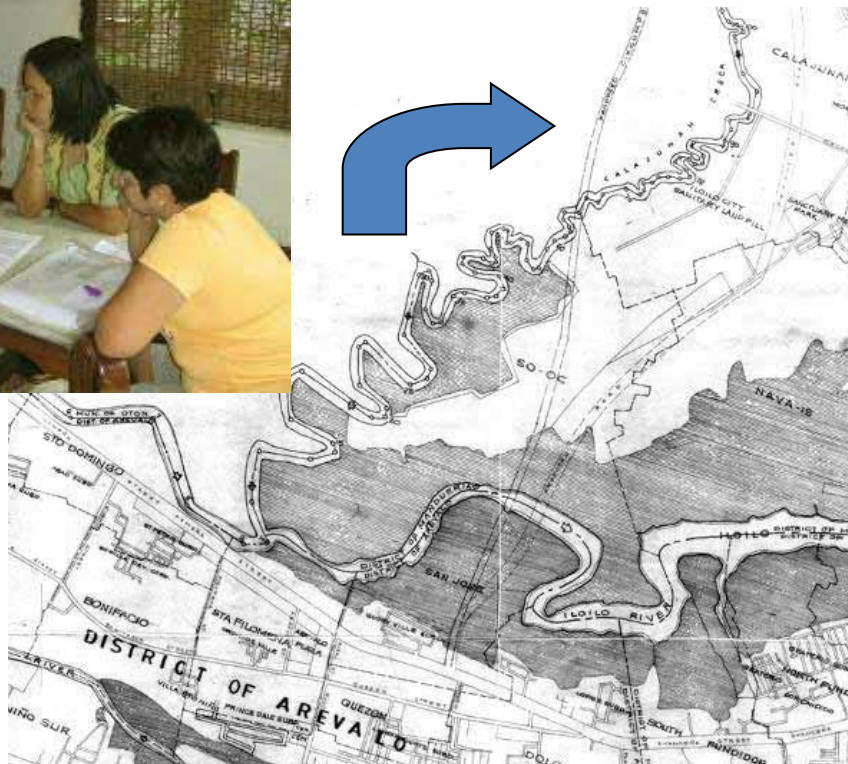
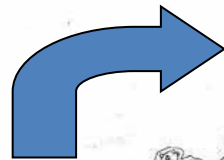
# Flood Protection

- Example: Janakpur municipality – drainage canal construction
  - 2,290 (green) workdays
  - USD 36,750
  - 1,090 m lined drains, culverts, 500 m road improvement



# Flood Protection

- Example: Iloilo Philippines - Clearing creeks/waterways to reduce flooding
  - 1,110 (green) workdays
  - USD 6,050



# Rural Transport

- Changes in local climates: more and more intensive rainfall, increased water volumes, water level rise, increased erosion: negative impact on rural access (education, health, markets etc)
- Interventions: climate proofing roads (embankments, drainage, culverts), maintenance, improving river access, village transport infrastructure (footpaths, footbridges)
- Employment: construction, improvements and maintenance



# Rural Transport

- Example: Dhanusha and Ramechhap districts – routine road maintenance teams
  - 8,786 (green) workdays
  - USD 34,200
  - 103 km of district roads
- Example: Dhanusha district – Road embankment





# Conclusion

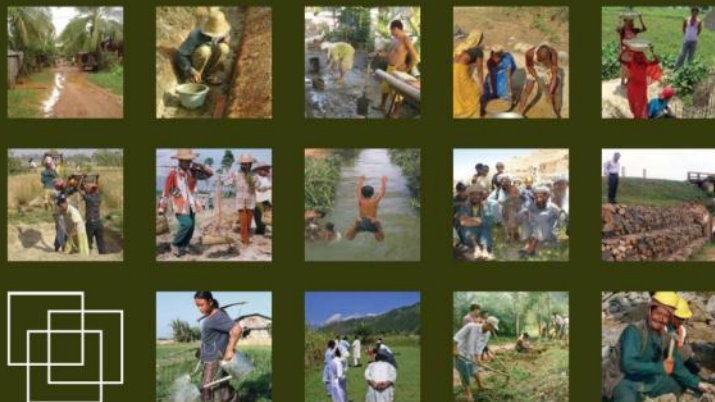
- A local resource based approach can be used for local solutions aimed at reducing and/or mitigating the effects of climate change, thus maximising the benefits to the poor of the investments that are made.
- Direct pro-poor benefits:
  - The assets created (improved targeting, reaching the poor) help **reduce the vulnerability to climate change**
  - Local **income** is generated and employment is created (green jobs)
- Indirect other benefits (with pro-poor results):
  - Various **skills** are developed
  - Local **communities are involved** in the process of planning and delivery of the works
  - Local **contractors are provided with work** that is meaningful and profitable
  - Local **governments are empowered** through a process which puts decision making in their hands
  - The use of local materials **reduces costs and provides further income** and employment to the communities

# Publications



International  
Labour  
Organization

## Local Investments for Climate Change Adaptation: In Brief Green Jobs through Green Works



ILO in Asia and the Pacific

