



# Climate Protection using Financial Incentives

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**KLH UNEP FI Seminar CLIMATE CHANGE AS A BUSSINESS OPPORTUNITY**  
**Bali, December 6, 2007**

**Session 3 : Sharing Experience on Financing Mitigation and Adaptation**

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## Structure

- *Who we are*
- *What we do*
- *Some examples*
- *Summary*
- *Discussion*



# We are part of KfW Bankengruppe



Promotion of housing,  
environment and  
climate protection, education,  
infrastructure, social issues



Financing volume in 2006  
EUR 35.5 billion (- 8.3%)

Promotion of SMEs,  
business founders,  
start-ups



Financing volume in 2006  
EUR 22.8 billion (+ 47.1%)

International project and  
export finance



Financing volume in 2006  
EUR 15.0 billion (+24%)

Promotion of developing  
and transition countries



Financing volume in 2006  
EUR 3.4 billion (+ 30.8%)

# Financial Instruments

tailored to partner country and project specifics



## Financial Cooperation (FC)

Budget Funds (2006: EUR 1,380 million)

KfW Funds (2006: EUR 1.018 million)



### Concessional Finance

#### Grants:

2006: EUR 902 million

#### Concessional Loans:

2005: EUR 280 million

#### FC Development Loans:

2006: EUR 705 million  
(Mixed finance, composite  
finance, reduced-interest  
loans)

#### FC Promotional Loans

2006: EUR 512 million

# Key Figures for KfW Entwicklungsbank.

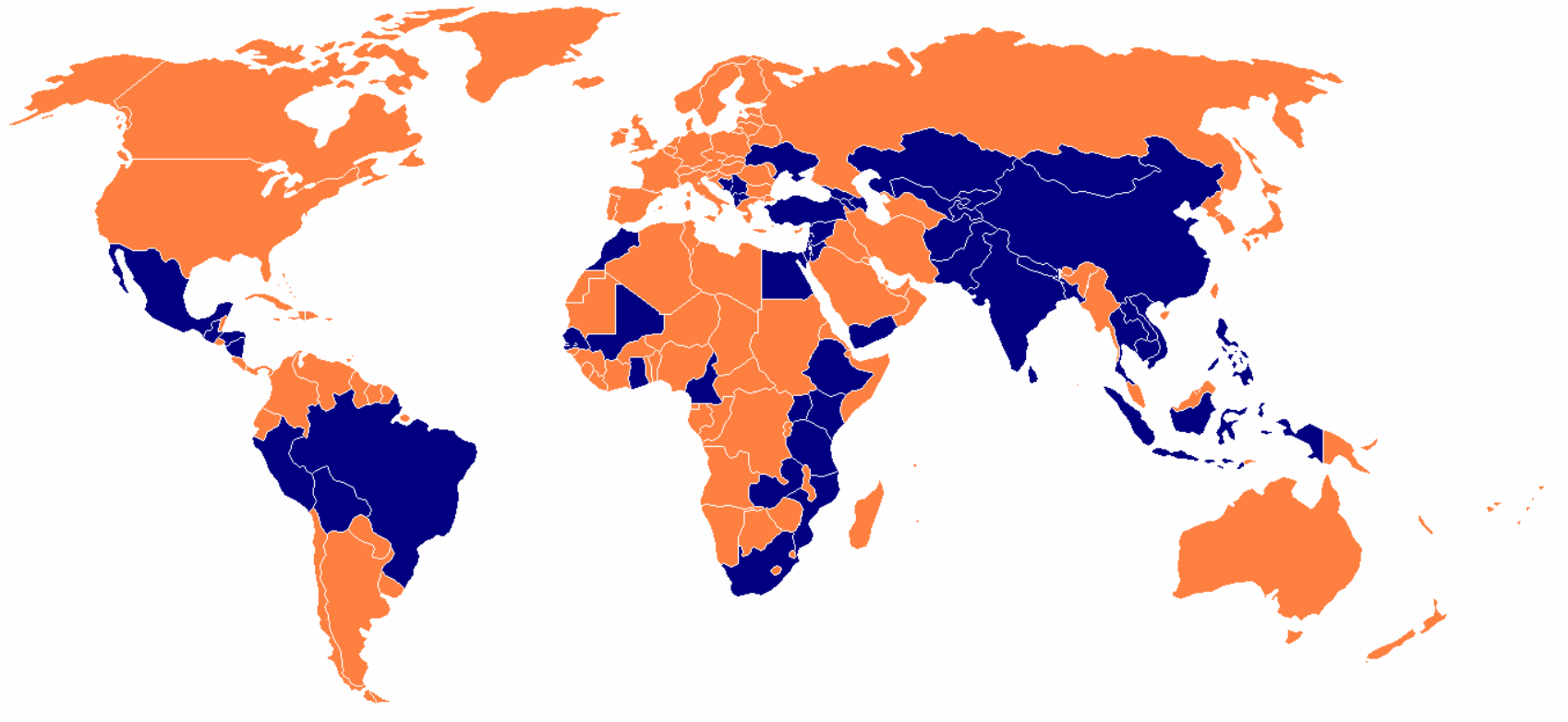


Number of Staff	387
Ongoing projects	over 1,400 in over 100 countries
Representative offices abroad	About 50
Commitments (2006)	EUR 2.5 billion
➤ of which KfW's own funds	EUR 1.0 million
Disbursements (2006)	EUR 1.5 billion (of which EUR 1.1 billion from budget funds)
Current portfolio of loans	EUR 18.5 billion
➤ of which budget funds	EUR 15.7 billion
➤ of which KfW funds	EUR 2.8 billion

# Where are we located?

Offices of KfW Development Bank and DEG.

As of January 2006



# Environmental issues and Climate Change in particular



- **Awareness quite prominent**

- Sustainability report (PwC certificated)
- Environmental and Social Guidelines
- In-house Sustainability Unit
- CO<sub>2</sub> –neutral since 2006  
compensation of appr. 30.000 t CO<sub>2</sub> in 2006

- **Environmental Activities**

- >20% of funding volume (2006)
- Overall reduction of GHG by investments 8.9 mio t CO<sub>2</sub>e
- KfW one of the three largest financing institutions in the world (World Bank, GEF)
  - renewables / energy efficiency
  - Forestry and critical ecosystems

# What we do on Climate change

## We support our Partner Countries



### **Mitigation:**

- to reduce Green House Gases (GHG) and thereby speed and scope of CC
- to achieve Economic Growth in a climate friendly way - low-carbon economy
- Focus more on MIC less on LLDC

### **Adaptation:**

- to achieve development goals and investment outcomes under CC conditions
- to cope with current and future CC – short term disaster relief and abrupt CC
- Focus more on LLDC and LDC

### **General Rule:**

- “Climate proofing” becoming an integral part of KfW’s cross-sector project design
- Manifold Objectives of projects to be taken into account - CC one of them
- Other important drivers of global change – demography, consumption patterns



# KfW's Engagement in Developing Countries.



Sector	Focus, relevant to climate change	Example
Energy	<p><b>Renewable energy</b>, e.g. wind, hydro, geothermal, photovoltaic, bio-energy</p> <p><b>Energy efficiency</b>, from primary energy conversion to end-use, e.g. Clean Coal Technologies, power stations with highly efficient "supercritical" technology, transmission/distribution system loss reduction, efficient and reliable metering, etc.</p>	<p>-160 MW wind farm in <b>Zafarana/ Egypt</b></p> <p>-Geothermal energy – electricity for 430,000 households, <b>Olkaria/Kenya</b></p> <p>-Modernized turbines in 6 coal-fired power plants / <b>China</b></p>
Transport	Supporting <b>public transport</b> and <b>efficient transport systems</b> – modal shift from road to rail, policy reforms	-Public transport
Industry	<b>Credit lines for SME:</b> focussing on energy efficiency improvement investments	<b>Montenegro/ Croatia/ Albania</b> (energy efficiency savings > 20%)

# KfW's Engagement in Developing Countries.



Sector	Focus, relevant to climate change	Project Example
<b>Agriculture and forestry</b>	<p><b>Agriculture:</b> erosion control, soil fertility, irrigation (mitigation and adaptation)</p> <p><b>Nature protection:</b> protection of (tropical) forests and biodiversity – mitigation and adaptation</p> <p><b>Afforestation/Reforestation/SFM</b> - creates new carbon sinks, protection of forests avoids further carbon emissions</p>	<p>-Introduction of irrigation system in climate sensitive regions/ <b>Mali</b></p> <p>-Sprinkler irrigation in <b>Kenya</b></p> <p>-Protection of tropical forest system / <b>Peru</b></p>
<b>Solid Waste</b>	<b>Infrastructure, regulatory and institutional frameworks</b>	<p>-Solid waste disposal and management in <b>Tunisia</b></p>
<b>Water management</b>	<p>Urban and rural <b>drinking water supplies, waste water and sewage</b> - Adaptation</p> <p>Focus on efficient use of existing resources: reducing water losses</p>	<p>-Rural water supply / waste water disposal in 45 communities / <b>Brazil</b></p>

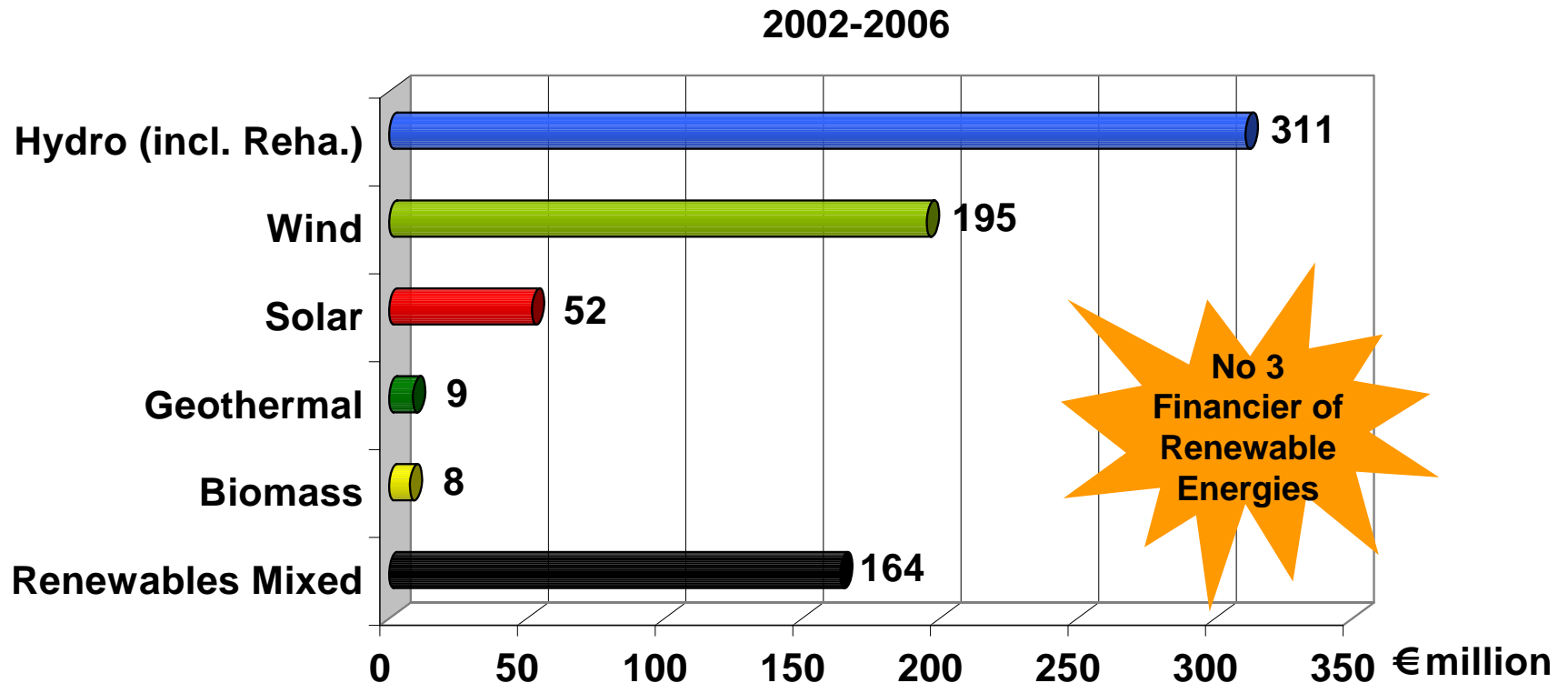
# KfW's Climate Change Portfolio



- **Energy Portfolio**
  - EUR 2.8 billion for more than 130 projects in over 35 countries  
15 million CO<sub>2</sub>e p.a.
- **Transport Portfolio**
  - EUR 900 million, mainly in Asia
- **Waste Portfolio**
  - EUR 180 million, methane mitigation  
1.1 million CO<sub>2</sub>e
- **Green Portfolio**
  - EUR 900 million for more than 100 projects in over 40 countries  
7 to 60 million CO<sub>2</sub>e p.a.



# Which Renewable Projects do we finance?



# Facility for Renewable Energies and Energy Efficiency (4 E).

- **Renewable Energies**

- wind, hydro, geothermal power plants, bio-energy and biogas plants, photovoltaic systems and solar thermal energy



- **Energy Efficiency**

- production, transmission, distribution
- use of district heat, combined heat and power, rational energy management and efficiency improvements in industrial and commercial end use

- **Project Example**

- **Morocco** - solar home systems for 37,000 households in rural regions
- **India** - modernisation of the electricity grid to reduce excessive electricity losses. released energy for productive use and improvement of the quality of supply

- **Volume: EUR 1.3 billion (2005 – 2011)**

# Project Example

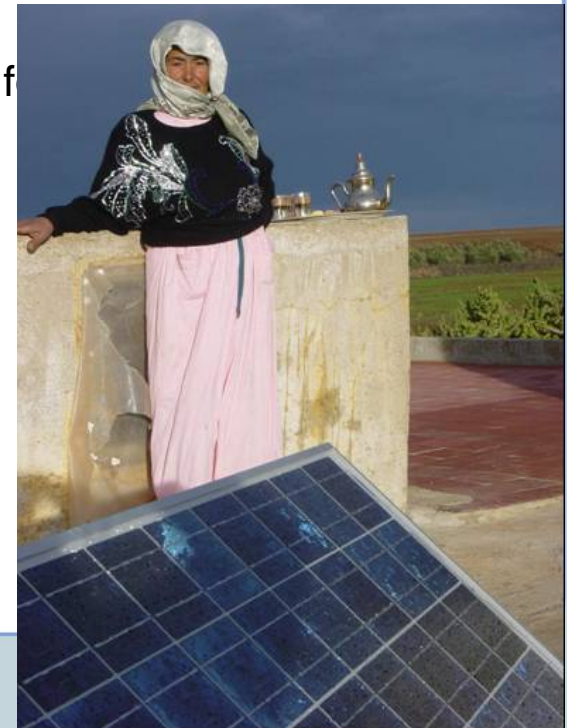
## Solar Home Systems - Morocco



- **Objective:** reliable, cost efficient and ecologically sound basic electrification
- **Target group:** rural poor Moroccan population
- **Finance:** FC development loan (4E facility) plus AFD, user fees and Office National de l'Electricité (ONE)

### Expected Benefits

- Access to housing illumination and communication means for Moroccans living in remote rural areas without network access
- Significant contribution to the improvement of living conditions
- Significant reduction of environmental pollution (MDG goal No. 7)



# New Initiative for Climate Change and Environmental Protection.



- **Environmentally sound urban development**
  - waste water, solid waste management, energy efficiency in buildings, arrangement of urban regions/ cities
  - *Cities Development Initiative Asia (CDIA) jointly with ADB*
- **Industrial environment protection**
  - special “green” credit lines for SME and industrial zones (“end-of-pipe” / “cleaner production”)
- **Energy Savings**
  - new and intelligent rail traffic and bus systems / and road connections
- **Climate protection / climate change adaptation**
  - integrated water management and flood control
  - climate resistant infrastructure, climate monitoring
  - conversion of agriculture and forestry



# Financial Incentives for NRM / CC here Forestry



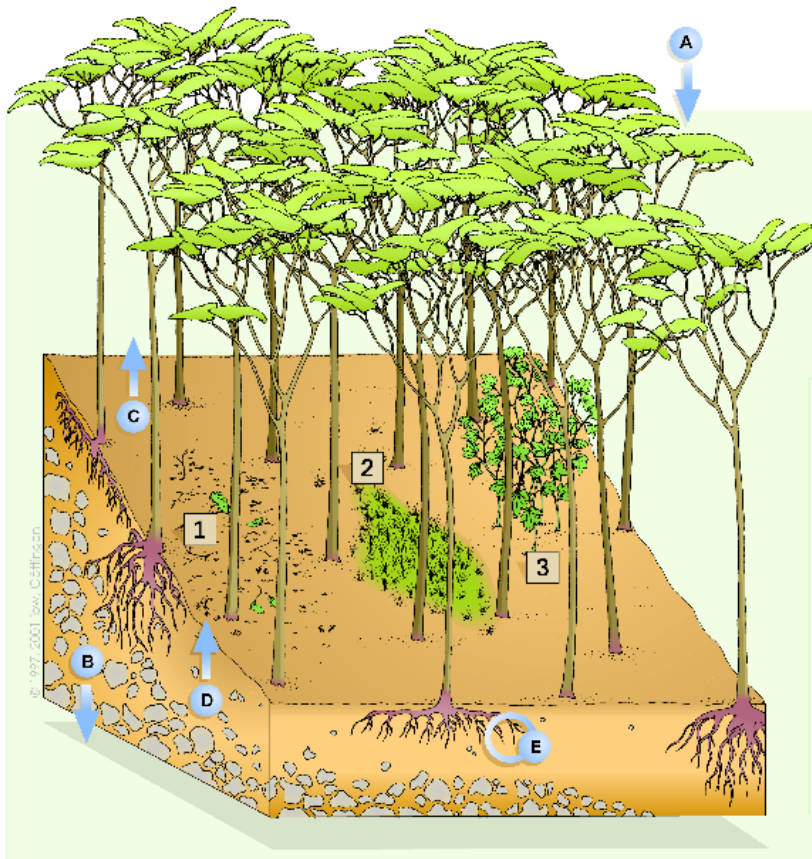
- **Carbon sinks and REDD** –  
case of afforestation / reforestation (CDM)  
improved forest management (SFM) and REDD on the agenda  
of Bali
- **Fuel-Switch** –  
**biomass** as a **Renewable Energy**:  
Bioenergy (electr., heating, gas)  
Biodiesel / Biofuel
- **Energy efficiency gains** in transformation and distribution

And / or

Combinations of these components => **integrated project design**



# Biomass Carbon Sequestration



- new financial input for natural resource management and conservation
- CDM limited to afforestation and reforestation measures
- complex project development regulations and certification procedures
- small-scale projects applying simplified rules (80% of TAC)

# CDM afforestation options in FC



Costa Rica – Study; tCER/ICER for PES-FONAFIFO: Substitution of ODA-Financing (WB and KfW-Fund); TAC ca. 120,000 €; estimated 2.6 mio. € ICER on 5,500 ha in 15 years

Albanien – KfW-project; rehabilitation of forest resources in Nationalpark; TAC ca. 120,000 €; estimated 7.2 mio. € ICER on 6,000 ha in 30 years

Brasilien – Study for existing KfW conservation project; potential for afforestation of bio-corridor linking national parks; investment volume of 6.3 mio. € incl. TACs; operational costs covered in project year 26

Guinea – Pre-feasibility study; VERs/ I/tCERs conservation combined with afforestation; biofuel from oil palms, private investors

PR China – Preparing for study on CDM potential for afforestation sites and combined forest/fuel switch project (e.g. Anhui)

# Project Example Indonesia



- **Very early stage** – commitments in October 2007, pre-feasibility missions carried out

- 2 programmes

**Forest Programme:** 26 Mio. EUR

→ Partner: MoForests

**Climate Change Programme:** 20 Mio. EUR

→ Partner: MoE

## Objectives:

Reducing GHG Emissions through Avoided Deforestation and forest degradation

## Approach

- REDD field pilot projects
- payments for environmental services
- Conservation District Concept (kabupaten konservasi)
- Using a district based approach
- Support to the Ministry of Forestry's Strategic Plan (sector reform aiming at Sustainable Forest Management)



Source: GTZ

# KfW Carbon Fund.



## Rationale

- Purchase of certificates through KfW as trustee for buyers (buyer's pool)
- long-term off-take contracts **with suppliers of certificates ("ERPA")**

## Approach

- first tranche: of EUR 84 million closed for 24 participants from EU; more than 10 million t CO<sub>2</sub>e contracted
- second tranche: prefinancing facility of EUR 100 million with EIB

## Advantages for developing countries

- Mobilisation of additional private capital for investments in sustainable energy systems
- Transfer of know-how for processing of CDM-/JI-projects
- Packaging with Financial Assistance of KfW and our private sector arm DEG



# Summary

## Strengths and challenges



- ✓ „competence bonus“ of Germany
- ✓ KfW: long track record of experience in environmental finance
- ✓ Open-minded to new technologies
- ✓ Inclusion of CDM in cooperation with Carbon Fund
- ✓ In-house co-operation (KfW group)
- ✓ More financial volume



- Systematic **Selection** (Ranking)
- Systematic **Project Design** (risks and impact)
- **Co-operation / Partnerships**
- **Increase the flexibility** of German Development Co-operation (focal areas and finances beyond)
- Increase **number and qualification of partners**

## Summary (2)

### Partners' perspective



- Technology transfer – yes or no!
- Focus on infrastructure deficits – not on climate
- Reducing costs of infrastructure services - energy, transportation, water
- Reduce the dependence on imports of fossil fuels (economic and security considerations)
- financing conditions to be attractive – full compensation for additional costs, no conditionalities
- Extra revenues from carbon finance (CDM)
- Support for reaching compliance with international standards and norms

## Summary (3)

# Requirements for significant contributions to mitigation and adaptation



- **Upscaling Success stories** that are mature, significant and replicable
- **Developing new approaches** investing time, patience and concessional financing even in IDA and MIC countries
- **Get the framework right:**  
political commitments must result in real changes of sectoral policies and investment environment  
if not investments and finance will not buy in



**Get in touch with us**



**Thank you for your attention !**

Further Information:

[www.kfw.de](http://www.kfw.de)

[www.kfw-entwicklungsbank.de](http://www.kfw-entwicklungsbank.de)

[www.kfw.de/carbonfund](http://www.kfw.de/carbonfund)





## Back up



Some more information on KfW Climate proofing and mainstreaming if required

# Integrating Climate Change into Development



- **CC has a big impact**
- **Huge effort for mitigation of emissions required**
- **Huge efforts for adaptation required**
- **Threat for development achievements (MDGs)**
- **Impacts on DC very significant**
  - **geographical position**
  - **dependence on agriculture**
  - **limited funding capacity**
  - **to integrate DC into global efforts for GHG-emission reductions**
- **Investments from Development Cooperation long term oriented**
- **Pivotal role of development cooperation (pilots)**

# In-depth Analysis of KfW Project Portfolio

## Methodology



### 1. Selected Disaster Risks:

- Droughts / desertification, floods, storms, rise in sea level.

### 2. Determination of Country List:

- 70 Developing Countries (DCs) with high exposure to environmental catastrophes'
- 82% of our FC portfolio (volume) in these high risk countries

### 3. Analysis of Appraisal Reports:

- How climate change risks are addressed and documented
- Potential of damage
- Potential to integrate protection of target groups into programs

# Evaluation/Screening of FC - Portfolio Project Examples



## **Positive Case – Protection of the Project Investment:**

**Project Hydro Power Station Middle Marsyangdi, Nepal**

- Risk of glacier lake outburst already included into monitoring system.

## **Negative Case – Protection of the Project Investment:**

**Project Rehabilitation of three Substations in three Towns, Mozambique**

- Flood risk in Mozambique well-known, but not adequately considered in the selection of locations for substations. Shortly before commissioning complete damage of one substation through flood.

## **Positive Case – Protection of Target Group/Third Party:**

**Project Cyclone Protection Shelters, Orissa, India**

- Considerably improved protection potential of shelters through upgrading of existing early warning system (equipment) and public information campaigns, public exercises

# Evaluation/Screening of FC - Portfolio

## Summary of Results



- Reference to existing Weather/Climate Risks in about 60% of the Appraisal Reports
- Consideration of Risks in Project Monitoring Concept considerably lower
- Significantly higher consideration of climate risks in:
  - Agriculture and environmental sector
  - Energy Sector, but only in hydro power stations
- Lack of explicit indications on specific selective adaptation measures for climate change impact
- Insufficient consideration of increase in weather/climate risk

## Our Approach for Mainstreaming CC:



- **Establishing permanent and dedicated Climate Change responsibilities within KfW Organization:**
  - **Position of Chief for Climate Change (Klimabeauftragter) directly reporting to Top Management Level**
  - **New Positions of specialized Climate Change Officers in different Departments on operational Level**
- **Development and implementation of Climate Change related procedures, guidelines and working tools into project planning and monitoring**
- **Mobilization of new and additional financing**

