



Research study on CDM application in Jordan

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Goal of this presentation

- **Presentation of the research goals**
- **Set up a first contact with representatives of the government and the industry**



Content

- **Introduction**
- **Diploma thesis**
 - 1. Potential for CDM projects in Jordan**
 - 2. Procedures for CDM applications in Jordan**
 - 3. CDM project proposal with industrial partner**



Introduction

René Bähler

- **Biologist**
- **Work in a construction company**
- **Quality-, environmental- and security management**

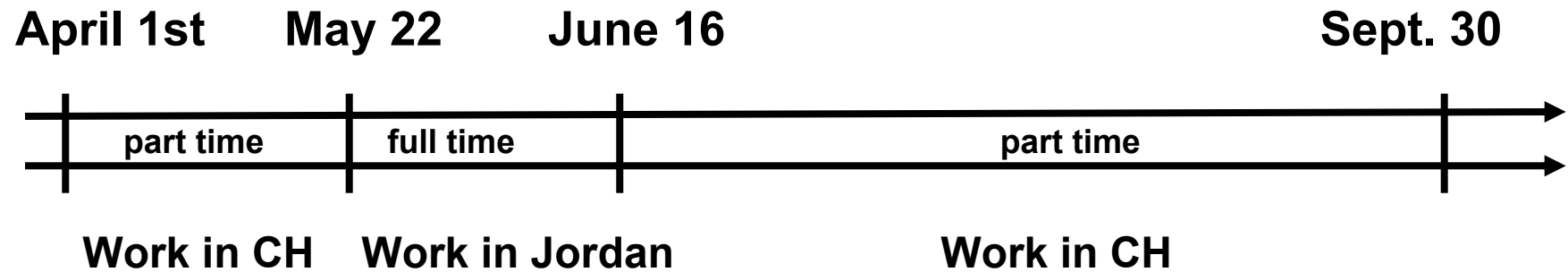
Cornelia Wolf

- **Economist**
- **Work in business consulting for water and energy suppliers**
- **Kyoto project in Romania (Joint Implementation, JI)**

**Postgraduate study in environmental management and technology
at FHNW in Basel, Switzerland**



Time schedule





Challenge of climate change

- **Use of fossile energy**
- **Increase of CO₂ concentration**
- **Increase of temperature**
- **Greenhouse effect**
- **Kyoto Protocol**

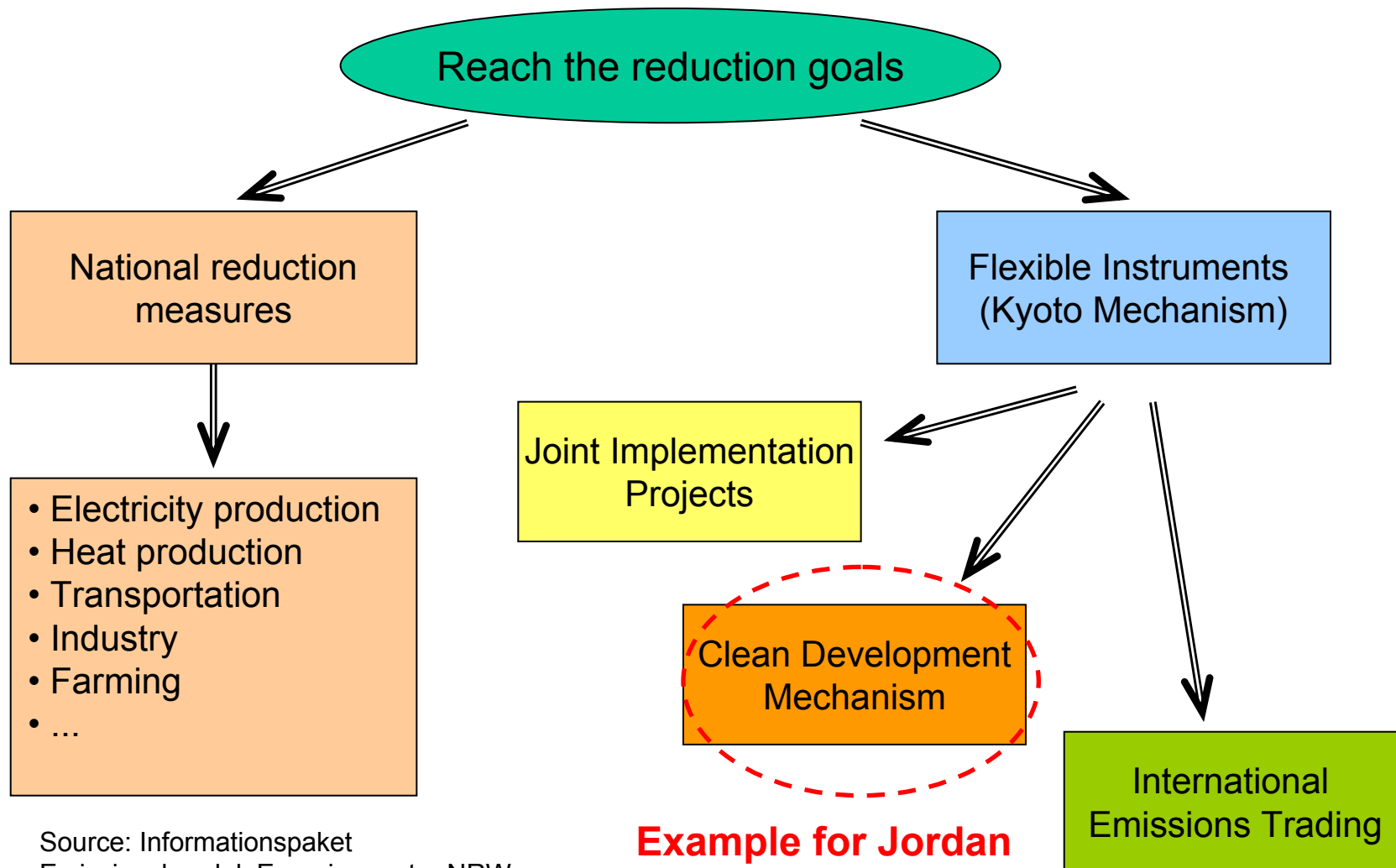


Kyoto Protocol

- **Came into force on 16 February 2005**
- **Reduction of greenhouse gas (GHG) emissions: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆)**
- **Reduction goal for Switzerland 8% (Basis 1990) in the period of 2008 to 2012**
- **Participation of Jordan in the CDM is voluntary. Jordan has ratified the Kyoto protocol**
- **Climate political tools are established**



Climate political tools (Example for Switzerland)



Source: Informationspaket
Emissionshandel, Energieagentur NRW



Diploma thesis

Research study on CDM application in Jordan

Three main results shall be achieved:

- 1. Potential for CDM projects within the Jordanian industry is known**
- 2. Procedures for CDM applications in Jordan are evaluated and enhanced**
- 3. A CDM project proposal is elaborated in cooperation with an industrial partner**



Diploma thesis

1. **Potential for CDM projects within the Jordanian industry is known**
 - **Overview of the industrial sectors and its potential for greenhouse gas (GHG) emissions reduction**
 - **Link of Cleaner Production (CP) with CDM application**
 - **Relevant approved CDM methodologies**
 - **Financial aspects of project types**
 - **Possible technical modifications and technology options to be applied for emissions reduction**
 - **Recommendations for the DNA (MoEnv) and RSS as well as for companies**



Goal: Reduction of the consumption of fossil energy

- **List of approved and publicly available CDM methodologies by the CDM Executive Board**



Potential CDM project ideas

- **Renewable energy**
 - a) Electricity production
 - b) Mechanical energy production
 - c) Thermal energy production

- **Increase of energy efficiency**
 - a) Energy and heat production
 - b) Energy transportation and distribution
 - c) Production process
 - d) Building shell (insulation...)
 - e) Optimization of district heating



- **Switch to fuel with lower part of C**
 - a) Fuel switch to gas

- **Waste management**
 - a) Reduction of methane emissions from landfills
 - b) Other activities in waste treatment (waste as fuel,...)

- **Chemical industry**
 - a) Process efficiency
 - b) Avoid Greenhouse gas emissions
 - c) Avoid burn offs

-> CP potential in CDM



Diploma thesis

- 2. Procedures for CDM applications in Jordan are evaluated and enhanced**
 - **Suggest a CDM project framework which considers the interests of Jordanian and Swiss organisations**
 - **Identify and discuss potential project developer such as RSS or other organizations (set up tasks, efforts, qualifications, organisational charts)**
 - **Elaborate a document which focuses on the required procedures for a successful CDM application in Jordan**



Institutional requirements to participate in the CDM

Investor country (for example Switzerland)

- Ratification of Kyoto Protocol
- Set up CO₂ limit
- Acceptance of a sanction system
- National register of greenhouse gas emissions targets

Host country (for example Jordan)

- Ratification of Kyoto Protocol
- Participation on CDM projects on a voluntary basis, therefore acceptance needed
- Designated National Authority (DNA)
(CDM authority): www.cdm.unfccc.int/DNA
- Host country can formulate additional requirements, for example technology criterias for a sustainable development



CDM PROJECT CYCLE

STEPS	SwissFlex	Project Developer	Designated Operational Entity	CDM Executive Board	Time
1	Pre-screening PIN	Project Idea ↓ Project Idea Note & Tests			30 days
2		Project Design ← Approval			
3			Validation		30 days public comments
4				Registration	56 days up to the 2 nd meeting of EB if review requested
5		Monitoring			
6			Verification Certification		
7				Issuance of CERs	15 days. Decision on merit of request: until 1 st EB meeting. Review completed within 30 days.

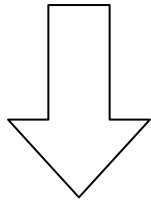
CDM project cycle

Quelle: Swissflex



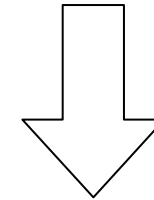
CDM project framework

Switzerland
(DNA: Swissflex)



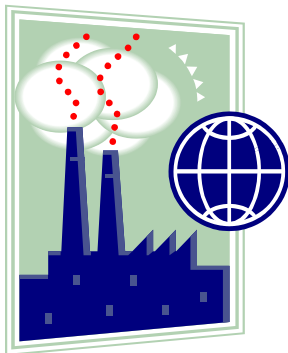
- Approval of PDD

Jordan
(DNA)



- Approval of PDD
- Confirm sustainable development

Investor
(Climate Cent Foundation)



Project
developer
(RSS, FHNW)



Project owner



Project Design Document

Content of the document

- A. General description of project activity
- B. Baseline methodology
- C. Duration of the project activity / crediting period
- D. Monitoring methodology and plan
- E. Calculation of GHG emission by sources
- F. Environmental impacts
- G. Stakeholder comments



Buying certificates

- Swissflex approves CDM according to legal procedures in the host country. Swissflex does not buy certificates.
- Climate Cent Foundation is responsible for buying certificates for Switzerland. They are interested in validated PDD until mid of 2007.
- Other buyers of certificates are
 - Funds (Worldbank, EBRD, ADB)
 - Brokers, Traders, Institutions
 - CompaniesDepending on typ of CDM project and amount of certificates
- Not via foreign aid



Transactional costs

Transaction Cost Components	Relation to project size	Estimate \$
Search costs	fixed	15'000
Negotiation costs	degressive	25-400'000
Baseline determination costs	fixed	35'000
Approval costs	fixed	40'000
Validation costs	fixed	15-30'000
Registration costs	fixed	10'000
Monitoring costs	fixed	10'000
Verification costs	degressive	8'000 per turn
Certification costs	degressive	NA
Transfer costs	proportional	1%
Registry costs	proportional	0.03%
Minimum fixed cost		150'000

Source: HWWA



Attractive CDM projects

- Using of approved and publicly available CDM methodologies
- Transactional cost-efficient projects
 - Reduction of methane emissions from landfills – 21 times stronger than CO₂
- Emissions reduction of at least 20'000 t / 50'000 t CO₂ per year
- Projects already planned by investors



Diploma thesis

- 3. A CDM project proposal is elaborated in cooperation with an industrial partner**

- **Elaborate a case study based on the results of the activities above**

- **The documentation will comprise at least a**
 - **checklist**
 - **flowchart**
 - **Project Idea Note (PIN)**



Summary

- Defined CDM procedures and requirements are in place
- High effort in a propre CDM pre-study and validated PDD needed for a demand for certificates
- Validated PDD until mid of 2007 demanded



Thank you