

Design and Implementation of National Domestic Biogas Programmes in Developing Countries



GMI Partnership-Wide Meeting 2011

Netherlands

Development

Organisation

Krakow, Poland

13 October 2011



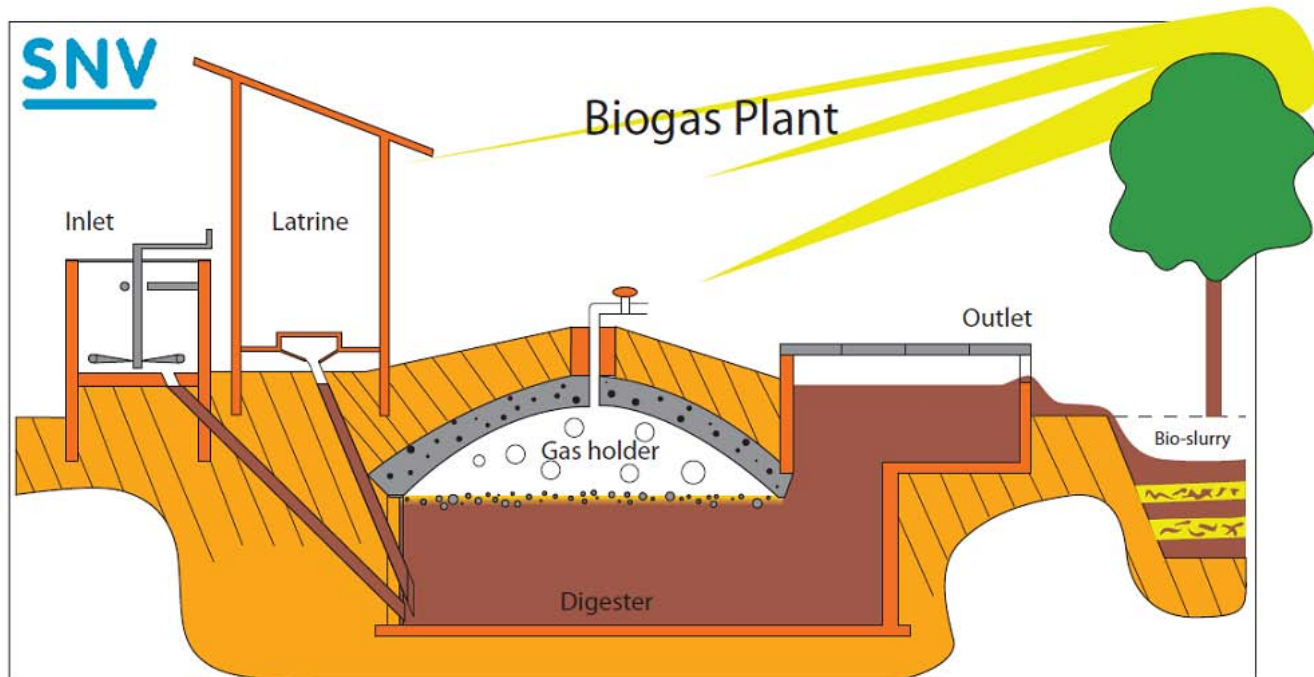
Connecting People's Capacities

SNV and Domestic Biogas

- SNV is an international development organisation, established in the Netherlands in 1965, providing capacity development services through local presence to local organisations in 36 least developed countries
- The main driver (since 1989) for a national, market-based approach on domestic biogas has been the desire to scale up in a sustainable manner and to achieve more impact

What is Domestic Biogas Technology?

- Design: fixed dome (2-20m³)
- Local materials & resources
- Feeding: livestock manure & human excreta (> 15 kg daily)
- USD 300-1,500
- Life: > 15 years
- Gas use: cooking & lighting
- Bio-slurry: organic fertiliser



Biogas Plant Construction in Vietnam



Biogas Use for Cooking in Bangladesh



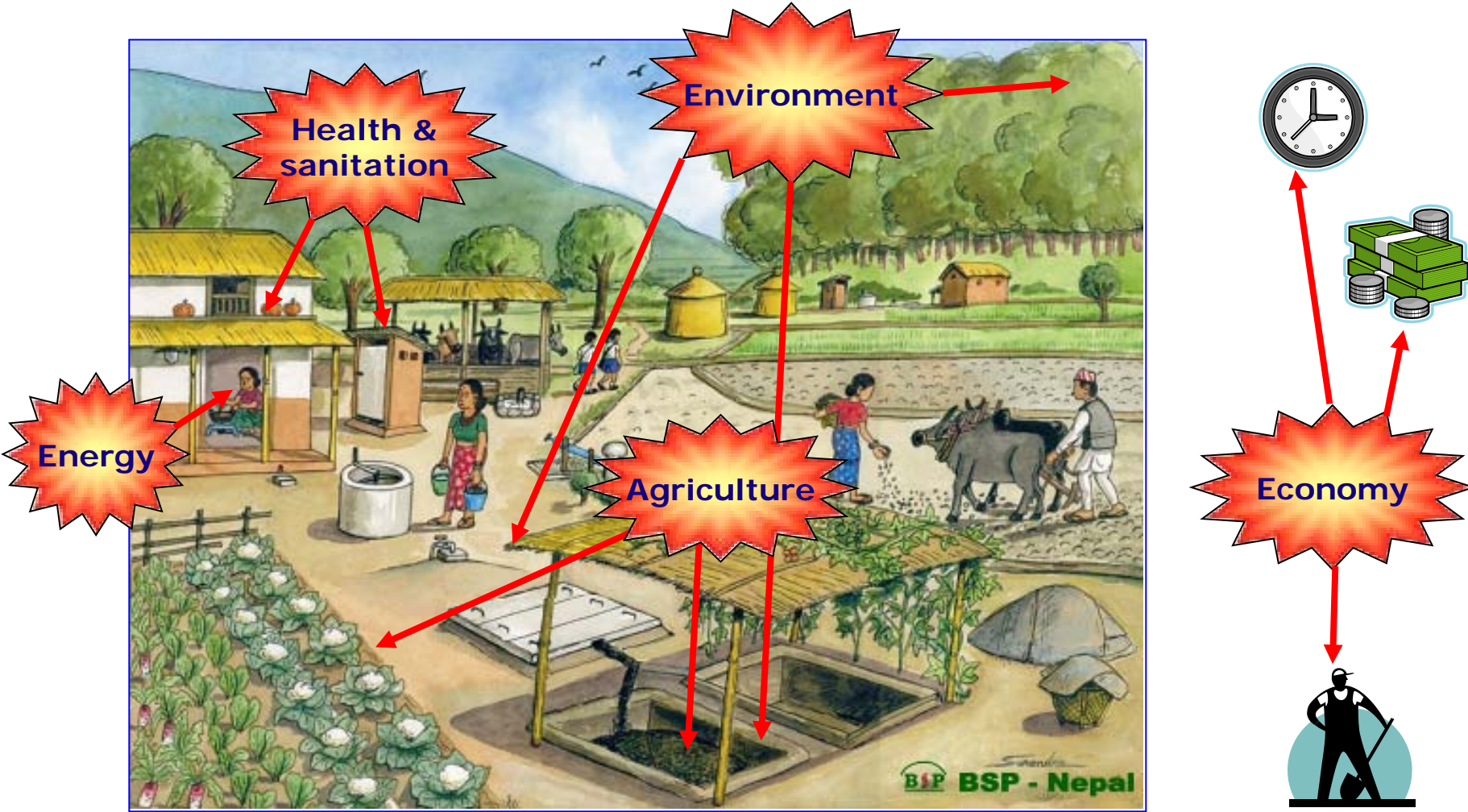
Biogas Use for Lighting in Nepal



Bio-slurry Use in Vietnam



Multiple Benefits of Domestic Biogas Plants



Coverage in Asia

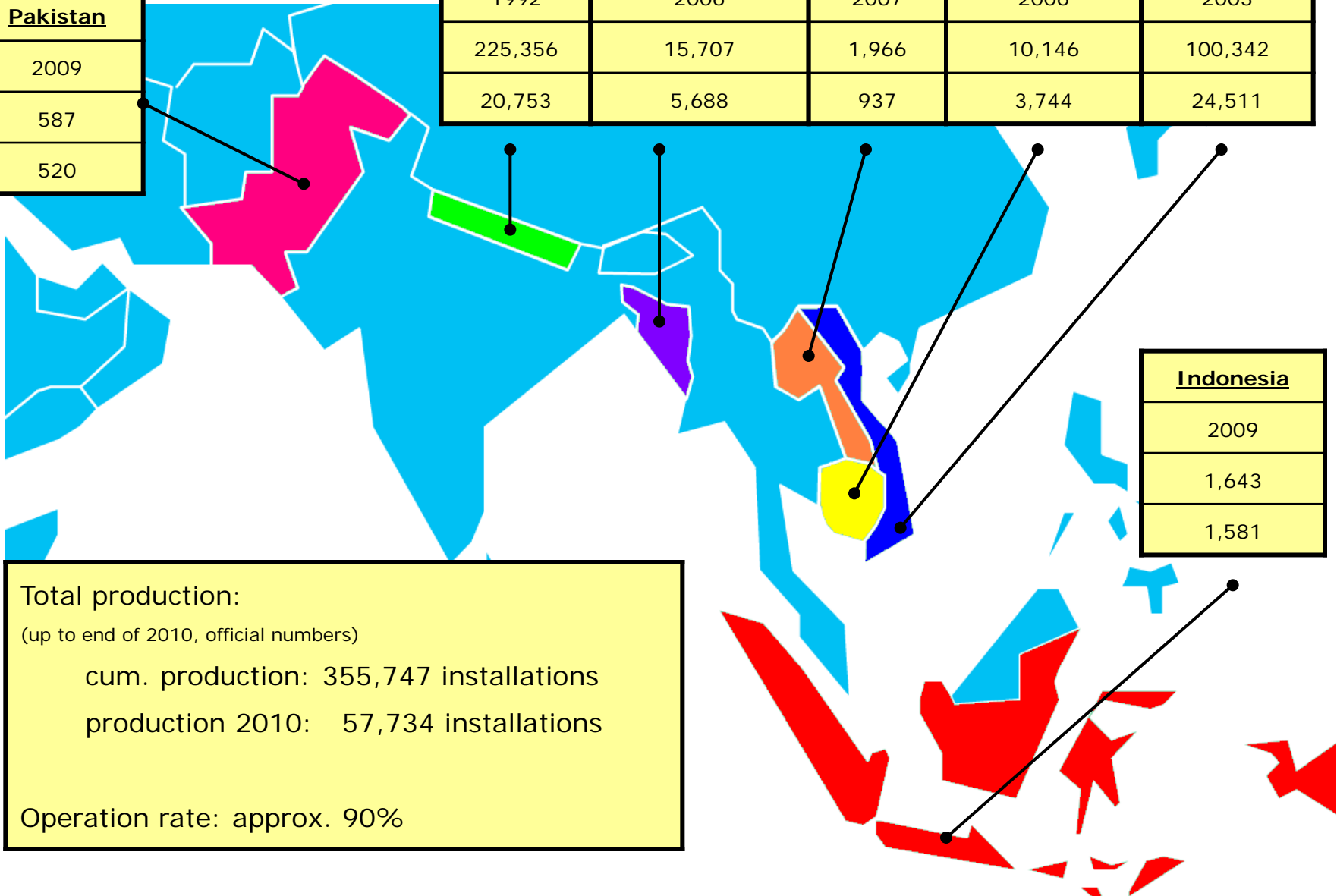
<u>Pakistan</u>
2009
587
520

<u>Nepal</u>	<u>Bangladesh</u>	<u>Laos</u>	<u>Cambodia</u>	<u>Vietnam</u>
1992	2006	2007	2006	2003
225,356	15,707	1,966	10,146	100,342
20,753	5,688	937	3,744	24,511

<u>Indonesia</u>
2009
1,643
1,581

Total production:
 (up to end of 2010, official numbers)
 cum. production: 355,747 installations
 production 2010: 57,734 installations

Operation rate: approx. 90%



Coverage in Africa



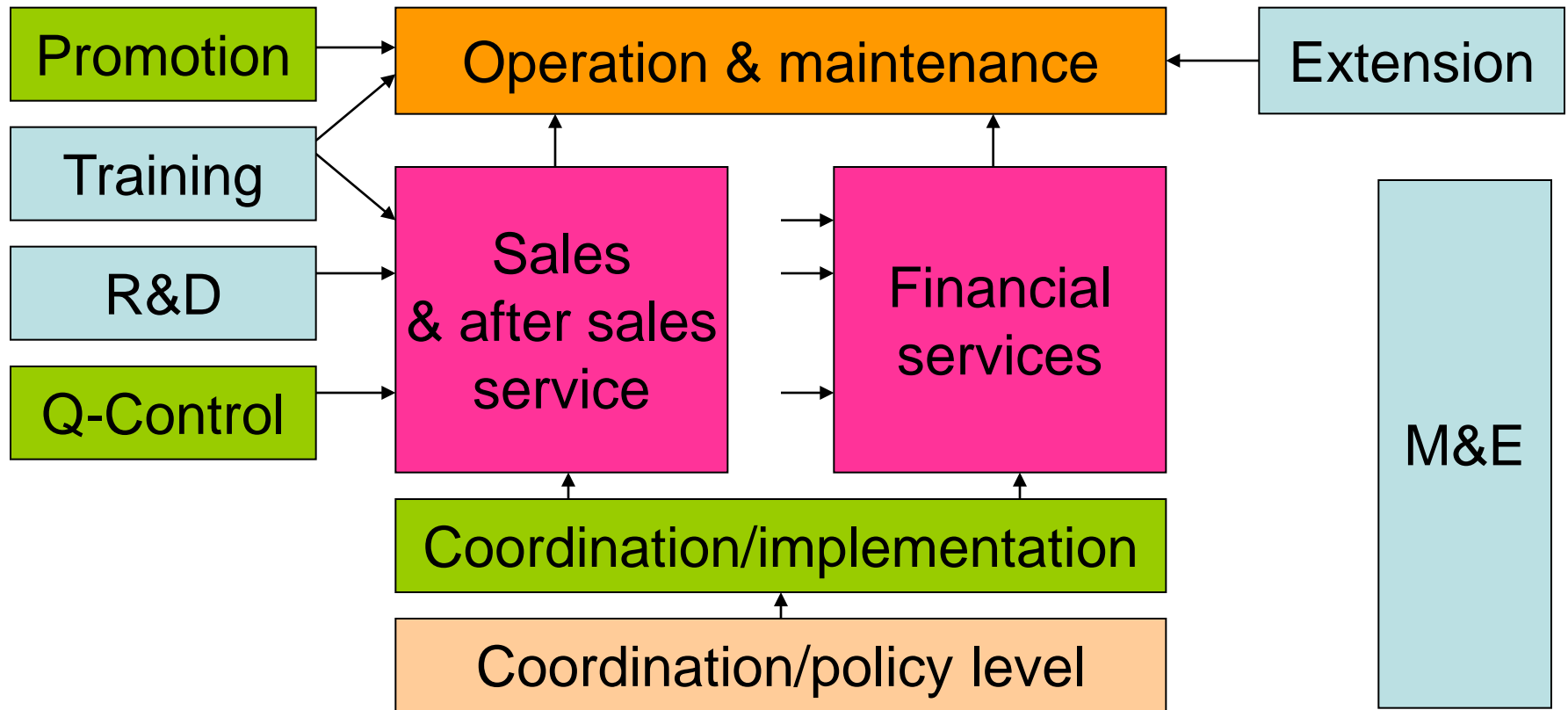
Progress in Africa since 2008:

- 4,733 biogas plants up to 2010 (nine countries)
- 3,501 units in the first half of 2011 only

National Programmes: Objectives and Duration

- Dual & interlinked objectives:
 - To provide access to biogas plant for X number of households;
 - To develop capacities in the domestic biogas sector
- Not less than 5-10 years are required to develop a sustainable, commercial biogas sector

National Programmes: Sector Functions



National programmes: Features

- National programmes attribute sector functions to multiple stakeholders in a comprehensive and coordinated manner, avoiding monopolies, conflicts of interests and hopefully also market distortion
- Regulated competition at the supply side allows eventually the customers to benefit
- Quality assurance to be designed *and* enforced to protect the interest of the households

Domestic Biogas in China and India

- China: About 40 million units installed by the end of 2010 out of which about 5 million in the year 2010 alone
- India: About 4.4 million units installed at the end of March 2011, out of which 0,15 million in the FY 2010/11

E4ALL Working Group on Domestic Biogas



- Innovative dissemination of an additional one million quality biogas plants by 2016 in about 15 Asian countries (including innovative programmes in China and India) providing access to sustainable energy for about 5 million people
- Significant contribution to the development of sustainable, market-oriented biogas sectors in the targeted countries

Categories of Biogas Countries in Asia

- I: Giant biogas countries being China and India: Innovation
- II: Countries with an existing biogas programme being Nepal, Vietnam, Bangladesh, Cambodia, Laos, Indonesia and Pakistan: Scaling-up
- III: Possible new biogas countries like Bhutan, Sri Lanka, Myanmar, Philippines, Thailand, Timor Leste: Start-up if feasible

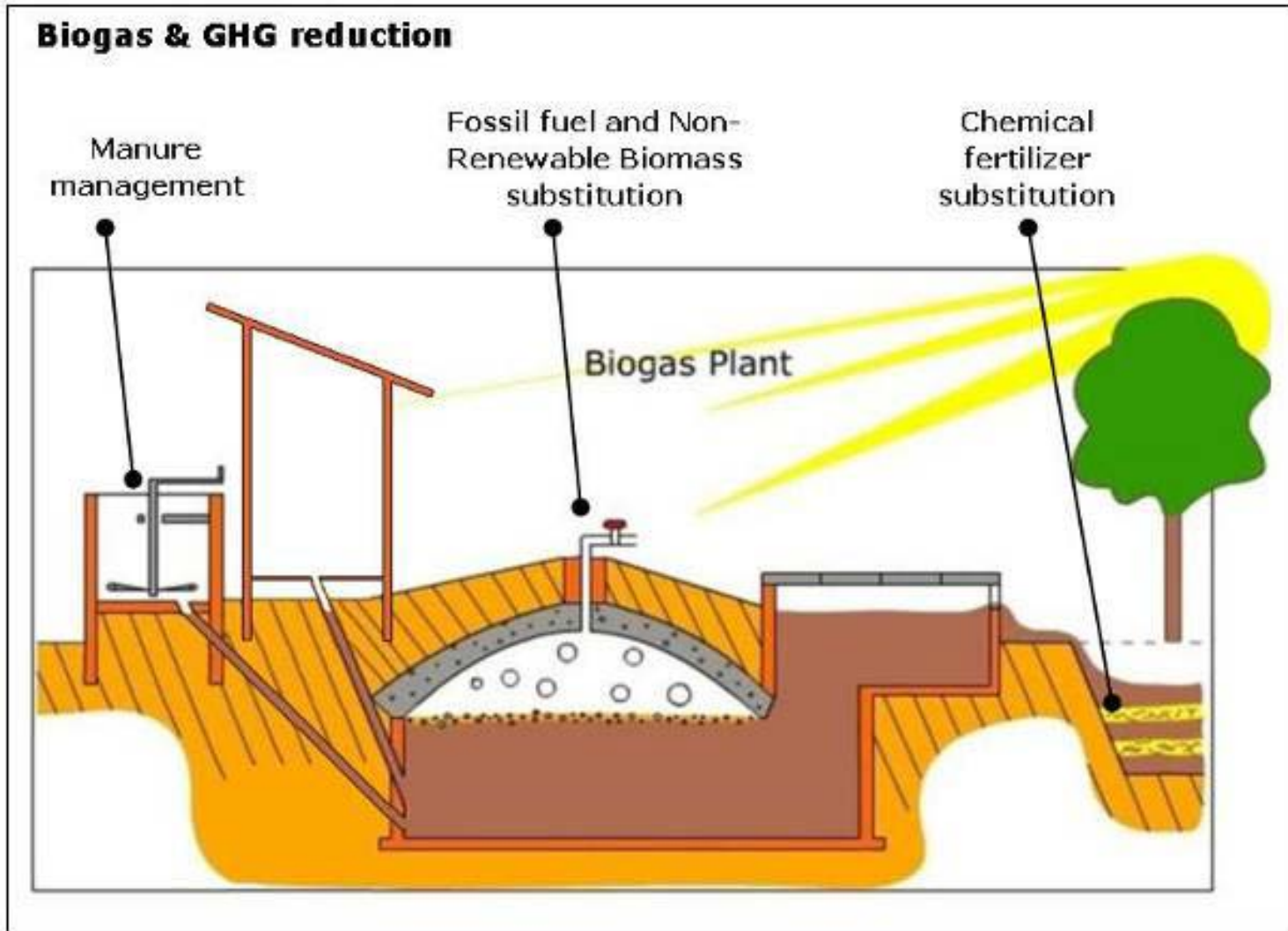
Estimated Expenditures up to 2016:

	USD x million	(%)
Biogas plant investment costs	622	82%
Sector development & innovation	118	16%
International TA	13	2%
Total	753	100%

Proposed Financing up to 2016

	USD x million	(%)
Households (in cash/on credit)	415	55%
Governments	131	17%
Carbon financing	26	4%
ODA (subsidies/sector development)	168	22%
ODA (ITA)	13	2%
Total	753	100%

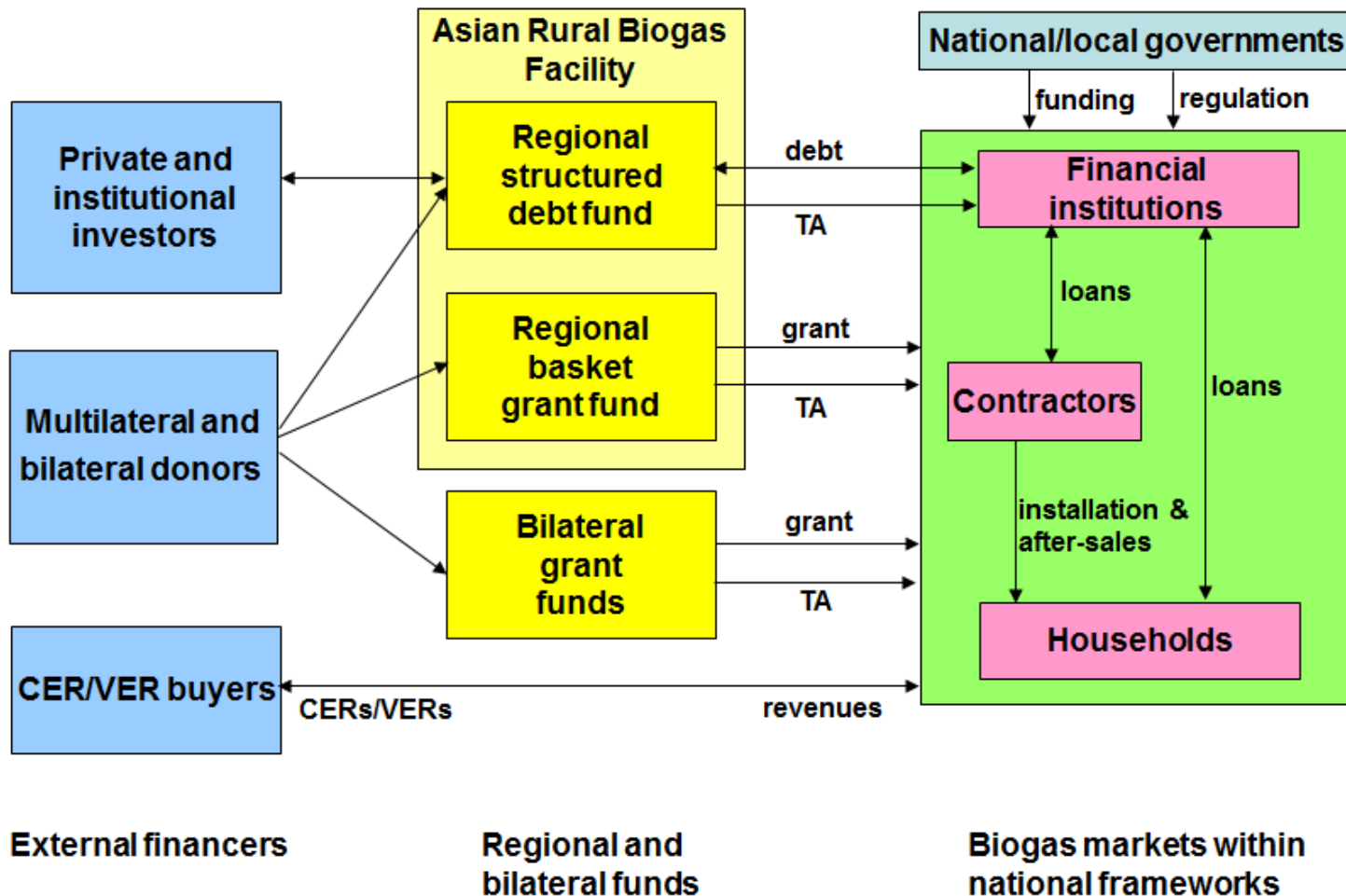
Domestic biogas and carbon revenues



Carbon revenues in SNV supported programmes

- Many efforts, yet limited results
- Two CER projects (totaling close to 20,000 units) in Nepal registered at the CDM EB (under old methodology)
- VER and VER-GS project in Cambodia, including 5,000 units respectively 20,000 units
- CDM-PoA in development in Eastern Africa, Indonesia, Nepal, Pakistan, Vietnam

Asian Rural Biogas Facility



Thank You!

