

Terms of Reference impact evaluation of Energy and Development Cooperation supported by the Netherlands

September 2009

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1 RATIONALE AND PURPOSE

Access to energy, and more recently renewable energy, for the poor in developing countries has been part of development cooperation by the Netherlands since the early 1990s. It is now considered one of the prerequisites for achieving the Millennium Development Goals (MDGs). The most recent policy on environment and renewable energy of the Ministry of Foreign Affairs (July 2008) announced an extra input of € 500 million for renewable energy in developing countries through the “Promoting Renewable Energy Programme” (PREP).

As noted in the 2008 policy on environment and renewable energy, the world today is confronted with huge, interrelated challenges with regard to poverty, sustainability, climate and energy. Access to renewable energy is becoming an increasingly important topic internationally, as expressed in for example the United Nations, G8 meetings and climate negotiations.¹ The Netherlands' energy programme offers an opportunity to learn from both past and ongoing efforts by governments and cooperating agencies to increase access to energy for the poor in developing countries.

The environment and renewable energy policy proposed an evaluation of the policy in 2011.² This policy evaluation is now due in 2013, according to the evaluation programme included in the budget of the Ministry of Foreign Affairs.³ The policy evaluation will consist of different

1 For example, the ratification of the Kyoto Protocol (United Nations 1997) and the World Summit on Sustainable Development (WSSD, United Nations 2002)

2 Ministry of Foreign Affairs, 2008, Beleidsnotitie milieu en hernieuwbare energie in ontwikkelingssamenwerking

3 Ministry of Foreign Affairs, 2008, Rijksbegroting 2009: Buitenlandse Zaken, Begroting V. Den Haag

prescribed components, amongst which studies of the impact of energy interventions for which these terms of reference is written.⁴

The Policy and Operations Evaluation Department of the Ministry of Foreign Affairs of the Netherlands (IOB) will undertake a series of impact evaluations of energy and development cooperation programmes in a selection of 5 countries with a concentration of projects supported by the Netherlands.⁵ The selection of programmes and projects is expected to cover a broad spectrum of interventions from the (renewable) energy policy. The impact evaluations will be undertaken in close collaboration with authorities in the countries concerned and implementing partners.

The purpose of the series of impact evaluations is two-fold. Firstly, they are intended to account for the investments in energy in developing countries by the Netherlands' Ministry of Foreign Affairs. Secondly, they aim to identify lessons for policy development and implementation in the field of (renewable) energy and development cooperation. The impact evaluations will feed into the broader policy evaluation of the energy and development cooperation policy of the Netherlands, due in 2013.

These Terms of Reference serve as framework terms of reference for the series of impact evaluations in five countries to be undertaken by IOB. They will also be used as framework terms of reference for contracting consultancy services for (parts of) the studies.

2 BACKGROUND

The first policy document by Ministry of Foreign Affairs of the Netherlands, 'Sustainable Energy Economy', was published in 1993. Since then the focus of the energy and development policy, both in the Netherlands and internationally, shifted significantly towards access to energy for the poor. The policy also moved from an output-oriented goal with different technical options (renewable, fossil fuels and energy efficiency) to a more focused goal of renewable energy.⁶ Moreover, in line with the Paris Declaration on donor-coordination and harmonisation, the energy and development policy of the Netherlands is in part implemented through delegated cooperation, for example through a silent partnership with the German Federal Ministry for Economic Cooperation and Development (BMZ).

Since 1998, the budget of the Netherlands' Ministry of Foreign Affairs explicitly designates funds amounting to 0.1% of GNP for environment programmes, including climate and energy programmes.⁷ Progress in the area of environmental and energy was deemed indispensable for achieving the MDGs. In 2004, the minister for development cooperation formulated an output target of 10 million people being supplied with access to energy by 2015 as part of the action plan towards the MDGs.⁸ By end 2007, the Ministry reported that 58% of the target for 2015 was achieved, or 5.8 million people, with three quarters thereof through renewable energy sources.⁹

4 The prescribed components of a policy evaluation cover: 1) the role of government in this area; 2) policy objectives (relevance); 3) used instruments; 4) budgets. Ministry of Finance, 2006, Regeling Periodiek Evaluatieonderzoek en Beleidsinformatie 2006, Published in Staatscourant, 28 april 2006, nr. 83, p.14

5 The term impact evaluation refers to the systematic identification of the (net) effects – positive or negative, intended or not – on target groups and the society caused by a given development program. It measures the effects that can be attributed to the intervention, i.e. at outcome level. See annex for more information.

6 Dankers and Rijs, 2007, Evaluatieve inventarisatie Energie en Ontwikkeling, in opdracht van BZ, DGIS november 2007

7 Letter from the Minister of Development Cooperation to Parliament, Determining Budget for 1998, TK 25 600 V, nr 78, may 1998. <http://ikregeer.nl/document/KST29631>

8 Conference 'Energy for Development', December 2004

9 Ministry of Foreign Affairs, DMW, 2008, Beleidsnotitie milieu en hernieuwbare energie in ontwikkelingssamenwerking, juli 2008.

In 2007, the new development cooperation framework for the government of the Netherlands' was presented: '*Een Zaak van Iedereen*', in which energy is a clear priority.¹⁰ For the years 2008-2011, euro 500 million has been budgeted for renewable energy for development programmes (375 additionally; 125 from the regular DGIS budget). The ultimate goal of this investment, as formulated in the environment and renewable energy policy of 2008, is to contribute to poverty reduction, gender equality and a reduction of the negative effects of the use of energy on the climate.¹¹ This is to be achieved by supporting governments in developing countries to develop and implement – in cooperation with private and public organisations - 'good and coherent' policies with regards to renewable energy and poverty reduction. Building on active channels of implementation, using existing capacity and knowledge, and enabling development countries' governments is at the core of the Dutch approach.

The "Promoting Renewable Energy Programme" (PREP) is focused on Sub-Saharan Africa and Indonesia, where support will be offered for four main, interlinking activities:

1. Investing directly in the production of and access to renewable energy in several priority countries and regions;
2. Improving the sustainability of production of biomass for energy purposes;
3. Influencing policy of partners responsible for investment in renewable energy;
4. Developing capacity and knowledge in developing countries with regards to renewable energy.

The impact evaluations described in this terms of reference focus on the first activity, direct investments in energy (bearing in mind that in practice the four different interventions are often combined and affect each other). The activities cover around 90 % of the commitments in 2008 by the Netherlands for energy and development cooperation.¹² The activities are to be implemented in different ways:

- In the *Great Lakes region*, the focus is on cross-border programmes using hydro power, connecting national electricity grids to distribute energy, and re-forestation. Partners are the World Bank, European Commission, European and Dutch investment banks, African Development Bank, Belgium and BMZ/GTZ.
- In *Indonesia*, the programme will contribute to investment programmes with regards to small-scale waterpower and biogas, as well as geothermal energy and sustainable forest management, together with the Indonesian government, World Bank and BMZ/GTZ.
- In several other *partner countries*, the bilateral development cooperation will be expanded with regards to environment and private sector development, including energy.
- A Partnership Agreement was signed with the German Federal Ministry for Economic Cooperation and Development (BMZ/ GTZ), called '*Energising Development*' (EnDev).¹³ This programme has a target of providing 3.1 million people with access to energy in 20 African countries and Indonesia. The first phase of this programme

10 Ministry of Foreign Affairs, 2007, Notitie: Een Zaak van Iedereen: Investeren in ontwikkeling in een veranderende wereld. TK 31250, nr.1, 16 oktober 2007

11 Ministry of Foreign Affairs, DMW, 2008, Beleidsnotitie milieu en hernieuwbare energie in ontwikkelingssamenwerking, juli 2008.

12 Ministry of Foreign Affairs, DMW, 2008, Beleidsnotitie milieu en hernieuwbare energie in ontwikkelingssamenwerking, juli 2008.

13 This consists of a Memorandum of Understanding, signed by the Dutch Minister of Development Cooperation and the German State Secretary of the Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ), and operationalised through a Partnership Agreement with the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ). BMZ is the leading partner of this worldwide programme, while the Netherlands is the 'silent partner'. GTZ has contracted SenterNovem for assistance (a/o monitoring and implementation). See Partnership Agreement Netherlands – GTZ, Grant Agreement GTZ – SenterNovem

(EnDev I) should have ended in 2008, but was extended until end 2009. In the meanwhile, the second phase has been started up recently.¹⁴

- There are several *multilateral programmes* for renewable energy that the Netherlands has been supporting, e.g. World Bank.¹⁵
- *Public-Private Partnerships* have been set up, for example to encourage the use of low-energy lamps using solar-energy in Africa (Philips) and to deliver solar energy to poor households and small enterprises (Nuon/FRES).
- Following the success of biogas programmes in South East Asia, with positive effects for women in particular, *biogas programmes in Africa* will be supported. The programme is implemented by the Dutch NGOs Hivos and SNV.
- Lastly, *small-scale projects* for renewable energy in developing countries are funded through the Daey Ouwens Fund (managed by SenterNovem).

Annex 1 provides an overview of the portfolio of programmes/projects supported by the Netherlands as per September 2009.

3 SCOPE

‘Access to energy’ is defined from a demand or consumption perspective to include energy services that improve living conditions (e.g. electricity for lighting and fuel for cooking) and enables social services and economic production (e.g. cooling of medicines, communication, manufacturing).¹⁶ In principle all sources of energy (fossil fuels, biomass, and renewable sources) are included, although there is a clear preference for renewable sources within the current Netherlands’ policy for their positive contribution to the environment and long term economic competitiveness.

The unit of analysis includes affected individuals (m/f), households, public facilities, small enterprises and individuals (gender specific) in a selection of countries (reference section 5 on approach and methodology). The study will also deal with effects on gender equity in access to, use of and benefits from energy products and services. The impact on macro variables, such as the climate, is not directly included in the statistical impact evaluation at the level of individuals, households and companies, but will be covered, and where possible quantified, in the descriptive part of the project/programme evaluations.

The impact evaluations will focus on different types of direct investments in production and improved access to energy, amongst which biogas, electrification and efficient cooking stoves (so mostly but not exclusively renewable), with several different types of implementation (e.g. through national government, public-private partnerships, NGOs). For more detail, see the section on approach and methodology.

An extensive country analysis of overall developments in the energy sector will complement the different impact evaluations in each country. Particular attention will be paid to other energy activities supported by the Netherlands and other main donors in the sector. This includes initiatives for harmonising and aligning support to the energy sector, such as the

14 For more information, see SEOR, 2008, *Accountable in Silence. Evaluation Dutch/German Partnership Energising Development’* report to Environment and Water Department (DMW), Ministry of Foreign Affairs, the Netherlands

15 For example, Energy Sector Management Assistance Programme (ESMAP), Asia Sustainable and Alternative Energy Programme (ASTAE), Financing Energy Services for Small-Scale Energy Users (FINESSE)

16 Chapter 1.1. *access to Energy*, in SEOR, 2008, *Accountable in Silence. Evaluation Dutch/German Partnership Energising Development’* report to Environment and Water Department (DMW), Ministry of Foreign Affairs, the Netherlands.

support for a sector-wide approach to energy in Rwanda. It could also cover energy-related projects from non-governmental organizations (NGOs), supported by the Netherlands through subsidies for Dutch NGOs or direct funding for NGOs by embassies.

The evaluation broadly covers the period between the first energy and development cooperation policy in 1993 and 2012. The country-specific analysis will focus on the period in which the Netherlands was actively involved in the energy sector, which varies between countries. With regards to the impact evaluations of energy projects, most projects fall under PREP, which started in 2008, though some projects have been started before that.

The series of impact evaluations will obviously not cover all of the energy programmes and projects supported by the Netherlands in all countries. However, the selection of a range of key interventions for the impact evaluations, in countries with a concentration of support for the energy sector by the Netherlands, will provide broad insight in effects of the Netherlands' policy. The broader policy evaluation of the energy and development cooperation policy, moreover, will also cover other important aspects of the policy that are not necessarily part of the impact evaluations or country analysis (such as international policy influencing and initiatives for sustainable production of biomass for energy).

4 EVALUATION QUESTIONS

The central research question of the series of impact studies is what have been the effects – positive or negative, intended or not – on living conditions of target groups of the energy and development cooperation programmes and projects supported by the Netherlands and how sustainable are the achieved results.¹⁷

A preparatory desk study of relevant policy, programme and project documents and literature on impact evaluation in the field of energy and development, was undertaken to capture the underlying theory and identify effect variables of interest for the main types of interventions, notably biogas installations, electrification (including grid, micro hydro, solar and geothermal energy installations) and improved stoves.¹⁸ The study resulted in result chains and evaluation questions on effects for these interventions (listed in annex 4-6).

Sustainability is defined as the continuation of benefits from a development intervention after completion of development assistance. Sustainability has different dimensions, including political, economic, financial and last, but not least institutional. The focus here will be on the capacity of concerned institutions to perform the required functions in the long run and address factors that put sustainability at risk.

The evaluation questions vary to a certain extent between the different types of energy interventions. They will furthermore vary between different countries, programmes and projects. However, central to the series of studies is a list of key, cross-cutting questions on problems addressed, context, Netherlands supported programmes and/or projects, effects and sustainability of benefits, provided below. Several of the questions are descriptive questions on context, programmes and projects. The main questions for the impact evaluations, however, are those on effects and sustainability. The list of questions is intended to structure

¹⁷ The effects (e.g. on time use, welfare implications such as health or education for girls) will be specified in the country specific terms of reference, in which the model for the impact evaluations will be elaborated depending on the context and specificities of the selected interventions.

¹⁸ SEOR, 2008, Baseline data collection for impact evaluation of the Netherlands supported energy programs: a preparatory desk study", September 2008, report to IOB, Ministry of Foreign Affairs, the Netherlands

the study and the report on the impact studies in a way that facilitates synthesis of the studies for the planned energy and development cooperation policy review.

Problem and context:

1. What are the key problems addressed by the programme/ projects supported by the Netherlands?
2. By whom and in what way was the programme/project identified?
3. What is the relevant context (access to different sources of (renewable) energy, demographic, political, economic, environmental, social, gender, rural/urban, policy and institutional) of the programme/ projects supported by the Netherlands?

Programme/ project description:

4. What are the objectives of the programme/project?
5. What is the target group?
6. Which organisations were involved (private/public sector)?
7. What approach has been adopted in order to meet the objectives?
8. What attempts have been made to target and include women at all stages in the programme/project cycle?
9. In what phase is the project being implemented (pilot, roll-out, scaling up)?
10. Did the approach build on existing channels of implementation, using existing capacity and knowledge?¹⁹ If not, why not?
11. What are the key characteristics of the management and support arrangements?
12. What are the financing mechanisms for the programme/project and does this include measures to ensure equity in access to energy (e.g. access to credit for women)?
13. What inputs have been provided?
14. What activities/ interventions have been undertaken?
15. What have been the main outputs? Have output targets been achieved?
16. Have specific measures been undertaken to enhance efficiency? If so, what have been the results?
17. What have been the total (development and recurrent) costs and the costs per main output and beneficiary? To what extent are costs covered by the contributions of the users/consumers?

Effects²⁰:

18. What has been the change in the number of individuals (m/f), households, communities and/or other targeted beneficiaries (m/f) that have access to and use the energy-related products and/or services provided in the target area?
19. How many devices were installed and how many are still in use? If they are not in use why not?
20. What has been the change in the production and consumption of the concerned energy source?
21. Do products and services meet quality standards?
22. What has been the change in expenditures for energy supply and consumption?
23. Has there been a shift from non-renewable to renewable energy sources?
24. Has the activity had an effect on reduction of CO₂ emissions?

¹⁹ For example, the Biogas Africa programme builds on the positive experience in Asia. It would be useful to study whether lessons learned on achievements and methodologies used in biogas programs in Nepal, Vietnam and Cambodia have been applied in Rwanda, Burkina, Ethiopia and Indonesia.

²⁰ These are general questions. The specification of benefits and effects depends on the kind of intervention. For each project/programme specific questions will be formulated based on the particular intervention logic of that project/programme. See Annex 4-6 for more detail.

25. What have been the effects on the living conditions of the target group(s)? By how much did the intervention(s) contribute to changes in the effect variables of interest (long/short term)?
26. How are benefits distributed among households in different income groups? Who decided?
27. Has the activity had an effect on gender equity in access to, use of and benefits from energy sources?
28. What positive and/ or negative unintended effects occurred?
29. Which intervention(s) work best and why?

Sustainability:

30. How did the institutional approach and arrangements evolve?
31. Are institutions' roles now clearly defined, accepted and fulfilled?
32. Have linkages been made with other sectors, e.g. health?
33. Do the concerned institutions have the required capacity to perform their functions for increasing access to renewable energy for the poor in the long term?
34. Was a (financially) self-sustaining, sustainable market for the energy sources created and how?
35. Are the Netherlands supported programmes and projects and their results affected or supported by the country policies, structures, processes and systems?
36. Are there energy activities of other parties taking place that affect the Netherlands supported programmes and projects and their results?
37. Do the institutional arrangements provide for monitoring of quality of services and sustainability, and follow-up of issues derived from monitoring data?

Lessons:

38. Based on the findings, which lessons can be drawn that are relevant to policy and policy implementation.

5 APPROACH AND METHODOLOGY

Selection of countries and interventions

PREP is implemented in 33 countries, of which 18 in Africa, 8 in Asia and 7 in Latin America. However, the energy and development cooperation policy focuses on Africa and Indonesia. The number of supported programmes and/or projects implemented in these countries varies between one and seven. Five countries have been selected for the series of impact evaluations based on the following criteria:

- priority region / country;
- concentration of Netherlands supported activities;
- covering the main types of interventions.;
- Netherlands' support for the energy sector implemented through a mix of partners.

The five countries selected are: Burkina Faso, Ethiopia, Indonesia, Rwanda and Senegal. The final choice of programmes and/or projects for impact evaluation will be confirmed after preparatory country visits. The selection of countries, programmes and projects will provide a broad insight in the effects of the Netherlands' policy on energy and development cooperation.

The aim is to select at least three different technologies used for improving access to energy, each undertaken in two or more countries. Possible technologies, used in the selected countries, are the following (note that this does not cover all interventions in these countries):

Table 1. Selection of countries and interventions for impact evaluations (to be confirmed)

Countries			
	Technology used		
Rwanda ²¹	biogas	Electrification (micro-hydro), solar lamps	
Senegal	biogas	electrification (mini-grids)	efficient cooking stoves
Ethiopia	biogas	Electrification (micro-hydro, grid densification), solar lamps	efficient cooking stoves
Burkina Faso	biogas	solar lamps	efficient cooking stoves
Indonesia	biogas	electrification (micro-hydro)	

The impact evaluation will focus on the impact of interventions that directly aim at enhancing access to (renewable) energy. Other activities that have an intermediate effect on access to energy, such as policy development or capacity building, will be considered in the descriptive analysis of the country context, overall support by the Netherlands, and developments in the energy sector.

Annex 2 provides an overview of the portfolio of all activities supported by the Netherlands in each country. Annex 3 describes the main programmes from which projects may be selected for the impact evaluations (Energising Development, biogas programme implemented by Hivos/SNV, public-private partnerships - PPPs).

The activities supported by the Netherlands are executed by a variety of partner organisations (such as BMZ/GTZ, Hivos, SNV, World Bank, Foundation for Rural Energy Services, Philips, SenterNovem).²² The impact evaluations will be implemented in consultation with these partner organisations. For example, some partner organisations already intend to undertake impact evaluations of their activities in the selected countries. In that case, IOB will consult the organisation on the possibility of using those studies as information source, taking into account the central evaluation questions of this Terms of Reference and methodological requirements for impact evaluation. Such cooperation could also include joint evaluations.

The main implementing partners for the selected technologies are, apart from the national governments of the countries in which the activities take place (again, note that this does not cover all partners):

Main implementing partners ²³					
Country	Rwanda ²⁴	Senegal	Burkina Faso	Ethiopia	Indonesia

²¹ In Rwanda, extra attention will be given to the use of sector support in the field of energy.

²² For example, for the energy programme funded by the royal embassy of the Netherlands in Indonesia, the technical assistance for hydro power is implemented by BMZ/GTZ, while the investments go through the World Bank.

²³ PPP = Public Private Partnership

²⁴ GTZ is the fundmanager for the biogas programme in Rwanda as part of the EnDev programme (unlike the other countries, where Hivos is fundmanager), with SNV providing advisory services to the programme

BMZ/GTZ	<i>Stoves, Electricity, Biogas</i>	X	X	X (stoves)	X	X(including geothermal)
Hivos/SNV	<i>Biogas</i>		X	X	X	X
PPP Nuon	<i>Solar electricity</i>			X		
PPP Philips	<i>Solar lamps</i>	X	X	X	X	

In each country, the evaluation will start off with a preparatory mission to consult and coordinate with the concerned authorities and other main stakeholders. This visit will also be used to collect information about the different energy programmes/projects, to assess the available data, make the final selection of interventions for impact measurement, and develop the design and methodology for the impact evaluation of the concerned programmes/projects. Moreover, in each country a research organisation will be identified for collaboration in design and piloting of questionnaires, data collection and data analysis. After this preparatory mission, a more detailed, country-specific terms of reference will be written for each country. Each country-specific terms of reference will include an evaluation matrix that will show the specific effect variables of interest and indicators for the various result levels.

Methodology

Attribution is an important methodological issue when measuring effects of programmes/projects (evaluation questions 18-29). This concerns the extent to which effects can be attributed to the particular programme or project, i.e. what is the net effect (or impact)? It requires careful consideration of other factors that also may have affected the variables of interest. Therefore, the series of impact evaluations will use statistical and econometric techniques to compare changes over time between households and communities with and without interventions. These quantitative techniques can be used to measure the relationship between intervention and effect variables, quantify how much each of the interventions contributed to the effects and control for other factors that might have an impact on the selected effect variables.²⁵ In combination with cost information, this can give insight into which (combination of) interventions is most (cost) effective. For more information, see annex 7.

The main data sources for the quantitative studies are sample-based baseline and impact surveys, which will be collected for this evaluation (unless suitable surveys exist). Where available and useful (e.g. depending on scope of interventions and quality of data), existing statistical data (such as household surveys, demographic and health surveys, administrative data) will be used as well.²⁶

The quantitative work will be complemented with qualitative research, which will inform the models used for the impact evaluations (similar to the result chains in annex 4-6), explain and

²⁵ Including addressing, where necessary and not dealt with by comparing over time, selection biases in case beneficiaries of energy programmes/projects have not been selected at random (e.g. for biogas, participants need at least to have zero-grazing cattle).

²⁶ Energy indicators do not usually feature in these standard household surveys. However, this data might be useful for identifying samples and complementing the surveys undertaken for this evaluation. In some countries such data will be cross-sectional, comparing households, in others there might be panel-data available, allowing comparisons over time.

validate the results of the quantitative studies. The qualitative analysis will be based on, amongst others, community level focus group discussions and interviews with key informants (e.g. target group, project implementers and funders).

The evaluation questions on problems, context and description of programmes and projects (1-17) will be addressed through reviewing available documentation and interviewing key informants at the relevant national, sector and household level.

The questions on sustainability (evaluation questions 30-37) will be addressed by including questions about institutional performance and factors that determine sustainability in the field surveys and focus group discussions. In addition field visits will be used to investigate in more depth the institutional aspects of programmes/projects at the relevant local, regional and national level.

6 STAKEHOLDERS

The main stakeholders for the series of impact evaluations are:

- National government, responsible for the national energy sector and development cooperation in the selected countries;
- Policy Department for Environment, Water, Climate & Energy of the Dutch ministry of Foreign Affairs (DME);
- Embassies of the Netherlands in the selected countries;
- Funding, executing and implementing partners, including BMZ/GTZ; Hivos, SNV, FRES, Philips, Nuon, SenterNovem, The World Bank and their partner organisations in the selected countries;
- Private sector actors that are involved in the selected programmes/projects (e.g. in the energy sector in general or as implementers for the projects)
- Other parties (such as donor agencies, universities, NGOs) active in the energy sector in the selected countries and interested in impact evaluation of support to energy programmes/projects;
- Programme/project target groups

The preparatory country visits to the selected countries will be used to coordinate the impact evaluations with the national government and partner organisations in the countries. Where possible, the impact evaluations will be implemented in collaboration with a national research organisation, through which mutual capacity to undertake impact evaluation will be built.

The main stakeholders in the selected countries and the Policy Department for Environment, Water, Climate & Energy of the Dutch ministry of Foreign Affairs (DME) will be actively involved in the evaluation of the energy and development cooperation programme. They will be consulted on the evaluation questions; they will be involved as key informants; and they will be asked to comment on the draft evaluation report. Programme/project target groups will be mainly involved as key informants. Where present, programme level representative beneficiary organisations will also be asked to comment on the draft report.

7 ORGANISATION AND PLANNING

The impact evaluations will be the responsibility of the Policy and Operations Evaluation Department of the Netherlands Ministry of Foreign Affairs (IOB), in consultation with the

concerned authorities in the selected countries. The energy impact evaluations will be led by the IOB evaluator Ms. Rita Tesselaar, together with one other evaluator (to be appointed by IOB). IOB will contract the services of experts on quantitative impact measurement and energy interventions as required through a framework agreement for the series of studies.

A reference group will be appointed for the series of impact evaluations, with as members:

- Representative of the Policy Department for Environment, Water, Climate & Energy of the Dutch ministry of Foreign Affairs (DME) of the Netherlands' Ministry of Foreign Affairs;
- Representative of the Department for Sustainable Economic Development (DDE) of the Netherlands' Ministry of Foreign Affairs;
- Expert on energy and development cooperation, including energy and gender issues, Dr. Joy Clancy, Associate Professor, University of Twente, the Netherlands.
- Expert to be appointed by BMZ.

For each of the country studies, specialised country experts will be added to the main reference group to contribute in writing and/or person. The country-specific reference group members will be:

- Representative of the funding, executing or implementing agency for programmes/projects selected for impact evaluation;
- One or two experts from the country concerned, preferably including one expert from the country's government (energy sector), to offer specific expertise on the energy (sub-) sector(s) in that country.

The reference group will comment and advise on the main draft documents for each country evaluation, notably the draft terms of reference, interim reports and the draft final reports.

In addition, two IOB evaluators, Ms. Phil Compennolle and Mr. H.Slot, will comment and advise on terms of reference and draft reports for peer review.

The planning for this series of evaluations will be finalised after consultation with key stakeholders in the Ministry of Foreign Affairs and with implementing partners (September 2009). Tentatively, the planning is as follows:

- Preparatory country visits will take place in 2009/2010, as soon as the overall terms of reference have been finalised and expert services have been contracted.
- In consultation with the Dutch embassies and the partners in country, a date will be set for baseline data collection. Most probably, these baseline studies will take place in 2010. At this point, for ongoing activities, interim results will be available. For activities that have been ongoing for some time, the baseline studies will provide information on impact of interventions up to the date of the study, as well as provide a baseline for the future impact study.
- The data collection for measuring the impact of the interventions will occur about two years after the collection of the baseline data (2012/2013).
- In 2013, the country reports and impact evaluations will be published as country reports and be used as input for the broader evaluation of the energy and development cooperation policy of the Netherlands.

8 REPORTING AND DISSEMINATION OF EVALUATION RESULTS

For each country, a separate country report will be prepared on the findings of the impact evaluations in that country. In each country the study will be concluded with a workshop involving key stakeholders and researchers from the country. During this workshop the findings of the impact evaluation will be presented and discussed.

In addition, in 2013 the findings of the different country studies and impact evaluations of different projects/programmes using particular technologies will be synthesised. This will be used as input for the policy evaluation on the energy and development cooperation policy of the Netherlands. This policy evaluation will be disseminated through a workshop in The Hague, the Netherlands, for policy makers in the Ministry of Foreign Affairs and other stakeholders.

9 BUDGET

The budget provision for the preparation and implementation of the series of impact evaluations is tentatively based on costs of previous IOB impact evaluations in other sectors, which included sample-based surveys and a sustainability assessment component. The preliminary budget is carefully estimated at approximately euro 5 million for four years. The budget is expected to be concentrated in the first year, 2010, when baseline surveys will be undertaken, as well as in the last years (2012/2013), when the impact surveys and analysis will take place. The budget will, however, be specified in more detail in the country-specific terms of reference, with attention to, for example, availability of data, required baseline surveys, existing research, local costs etc.²⁷

No financial contribution is expected from programmes funders/implementers, apart from access to baseline and impact surveys that have been undertaken and that might be of use for the IOB evaluation.

²⁷ The programme will eventually be covered by five different activities – each country with its own budget - in the IOB budget.

ANNEX 1 PORTFOLIO NETHERLANDS' ENERGY PROGRAMMES/ PROJECTS

Portfolio Renewable Energy (500 mln Euro) – 1 Sept 2009	euro mln
1. Sustainability biomass	
Funding SenterNovem	17,5
Indonesia	6
Mozambique	5
BioEnergy & Food security - BEFS (FAO)	4
2. Great Lakes Region	
Great Lakes regional programme	
Reforestation for firewood and charcoal (via SALIN partner IFDC)	20
Renovation Ruzizi hydropower plant (FMO)	5
Connecting electricity grids Burundi en Rwanda (AfDB and NBI/NELSAP)	25
Rwanda, national	
National Energy Plan Rwanda - Min. energy	30
Forestry MIRENA/BTC	10
3. Indonesia	
Capacity development in 5 provinces en at national level (SenterNovem)	9
Small-scale hydropower (GTZ)	15
Development geothermal energy (2009) (World Bank)	2
Biogas programme (2008) Hivos (advisor SNV)	6
4. Bilateral divers	
Zambia: Lusaka: Silent partnership met SIDA	6,88
Mongolia: Solar energy (via World Bank)	4,9
5. Intensifying and expanding existing programmes DMW	
World Bank activities	
World Bank Programme 2007 (7 activities)	20
- SREP - CIF	54
- ASTEA - Asia	8.6
- ESMAP	p.m.
IFC: Private sector in Renewable Energy	15
PPP - companies	
PPP Philips (with local NGO's) - Green light for Africa (pilot Ghana)	3,3
PPP Nuon (with Fres)	10
Divers programmes	
Hivos/SNV (Biogas Africa)	30
BMZ Energising Development phase 2 (20 countries)	68
Daey Ouwens Fonds - small-scale initiatives (with SenterNovem)	20
GVEP SALIN	4,5
EUEI PDF - Phase II	2
6. Pipeline	
Burundi, Renewable energy (proposal 10 million via WB)	p.m.
Tanzania, Contribution to national energy plan (proposal 20 million via WB)	p.m.
Contracted total as per 01/09/09	267

ANNEX 2 OVERVIEW OF PROGRAMMES/PROJECTS IN SELECTED COUNTRIES

Ongoing and planned Netherlands supported activities in selected countries

Country	Project description	Budget	Partners	Technology / intervention
Burkina Faso	BMZ Energising Development phase 2 (20 countries) PPP Partnerschap Hivos/SNV - Biogas Afrika PPP Philips with local NGO's - Green light Africa PPP Nuon-FRES <i>NGO activities supported through TMF / MFS</i> <i>EnDev phase 1</i>		BMZ/GTZ Hivos/SNV Philips Nuon	stoves (market chain approach) biogas solar lantern market development stand alone solar energy installations
Ethiopia	BMZ Energising Development phase 2 (20 countries) PPP Partnerschap Hivos/SNV - Biogas Afrika PPP Philips with local NGO's - Green light Africa <i>NGO activities supported through TMF / MFS</i> <i>EnDev phase 1</i>		BMZ/GTZ Hivos/SNV Philips	stoves electrification biogas solar
Rwanda	Regional: Reforestation National: National energy plan Rwanda - Ministry of Energy Forestry MIRENA/BTC BMZ Energising Development phase 2 (20 countries) WB Programme 2007 (7 activities) - CEIF PPP Philips with local NGO's - Green light Africa <i>NGO activities supported through TMF / MFS</i> <i>FMO funding of Rusizi Dam II rehabilitation</i> <i>EnDev phase 1</i>	30 30 10	IFDC Government Mirena/BTC BMZ/GTZ World bank Philips	reforestation national energy policy reforestation electrification / micro hydro / biogas divers solar
Senegal	BMZ Energising Development phase 2 (20 countries) WB Programme 2007 (7 activities) - CEIF Daey Ouwens Fund for small-scale initiatives PPP Partnerschap Hivos/SNV - Biogas Afrika PPP Philips with local NGO's - Green light Africa <i>NGO activities supported through TMF / MFS</i> <i>EnDev phase 1</i>		BMZ/GTZ World bank SenterNovem Hivos/SNV Philips	stoves electrification TBD biogas solar lantern market development solar energy installations
Indonesia	Sustainability biomass Capacity development in 5 provinces and nationally Small-scale hydropower energy Development geothermal energy (2009) PPP Partnerschap Hivos/SNV (through embassy) BMZ Energising Development phase 2 (20 countries) <i>NGO activities supported through TMF / MFS</i> <i>EnDev phase 1</i>	6 10 14 10 6 15	Government SenterNovem GTZ / World Bank World bank / SenterNovem Hivos/SNV BMZ/GTZ	biomass micro hydro Geothermal energy biogas micro hydro

Energy indicators

Human Development Report 2007/2008	Electricity cons per capita (kilowatt)	Electricity cons per capita (% change)	Electrification rate (%)	Pop. without electricity (million)	Coal (% of total primary energy*)		Gas (% of total primary energy*)		Hydro, solar, wind, geo thermal power (% of total primary energy**^)		Biomass and waste (% of total primary energy**~)	
					1990	2005	1990	2005	1990	2005	1990	2005
	2004	1990-2004	2002	2006	1990	2005	1990	2005	1990	2005	1990	2005
Indonesia	476	0.8	54	101.2	3.8	14.2	17.9	17.1	1.5	3.7	43.6	28.5
Uganda	63	0.6	9	24.6	..	..	..	..	..	..	..	..
Senegal	206	0.7	33	7.8	0.0	3.1	0.2	0.4	0.0	2.0	60.6	39.2
Rwanda	31	0.2	(5)	..	..	..	..	..	..	..	..	..
Ethiopia	36	..	15	60.8	0.0	0.0	0.0	0.0	0.6	1.1	92.8	90.6
Mali	41	0.4	..	..	..	..	..	..	..	..	..	..
Burkina Faso	31	0.6	7	12.4	..	..	..	..	..	..	..	..

* TPES is a measure of commercial energy consumption (excluding exports). In some instances, the sum of the shares by energy source may not sum up to 100% because pumped storage generation has not been deducted from hydroelectricity generation.

^ In 2005, 12.6% of the world's energy needs were supplied by renewable sources. Hydro-electric power constitutes 17% of this total, solar/wind/other 1%, geothermal 3% and biomass and waste 79%. Shares for individual countries are different.

~Biomass, also referred to as traditional fuel, is comprised of animal and plant materials (wood, vegetal waste, ethanol, animal materials/wastes and sulphite lyes). Waste is comprised of municipal waste (wastes produced by the public service sectors and collected by local authorities for disposal in a central location for the production of heat and/or power) and industrial waste.

ANNEX 3 POSSIBLE PROGRAMMES TO BE SELECTED FOR IMPACT EVALUATION

Energising Development (EnDev)

Energising Development (EnDev) is a Dutch – German partnership implemented through delegated cooperation with the German Federal Ministry of Economic Cooperation and Development (BMZ) as the lead donor. It is a jointly financed programme. BMZ has contracted GTZ for the implementation.²⁸ The first phase of EnDev has been reported to have provided close to 5 million people in developing countries with sustainable access to modern energy. The target for EnDeV II is to reach an additional 2.5 million people. Sustainable access implies the establishment of self-sustaining markets for affordable energy technologies, fuels and services adapted to local circumstances, without dependency on longer-term external donor funding. EnDev focuses on expanding energy in four areas:

1. Energy for cooking (biogas installations and establishing self-sustaining markets for production and sales of more efficient (improved) cooking stoves, tailor-made to suit the purchasing power of the targeted households);
2. Energy for lighting/household applications (establishment of economically sustainable electricity production and distribution schemes for rural communities through e.g. micro-hydropower or solar PV);
3. Energy for social infrastructure (electricity for schools, clinics and hospitals and community centres, e.g. for lighting of schools or operating theatres, for cooling of medicines);
4. Energy for productive use/income generation (e.g. for driving motors, or for drying and packaging agricultural products).

The first phase, EnDev I, ran from 2005-2009, with a contribution by the Netherlands of euro 60 million. Since then, 23 projects have started in 20 countries, using successful project concepts developed and implemented by GTZ. EnDev II builds on the experience of EnDev I and expands the activities in Sub-Saharan Africa. EnDev II started in July 2009 and will run until the middle of 2014 with euro 68 million from the Netherlands and euro 10 million from BMZ (increasing annually with 10 mln euro by BMZ each year if annual budget allows this). EnDev II is planned in Bangladesh, Benin, Bolivia, Burkina Faso, Ethiopia, Honduras, Indonesia, Kenya, Malawi, Mali, Mongolia, Mozambique, Nicaragua, Peru, Rwanda, Senegal, Tanzania, Uganda and Zambia. In most of these countries, except for Indonesia, the Dutch embassies are ‘silent partners’ and are not actively involved in the projects.

Africa Biogas Partnership Programme

The Dutch Ministry of Foreign Affairs supports the development of biogas since 1992, through a programme by SNV in Nepal. Since then, this programme has expanded throughout Asia (Asia Biogas Programme) with activities in Vietnam, Laos, Cambodia en Bangladesh. The output target of this programme is to have 1.3 million people make use of biogas by 2012. According to reports, about 251,500 households have installed biogas plants by the end of 2008.

Building on the success of the Asia Programme the Africa Biogas Partnership Programme (ABPP) was created. The programme is a Public Private Partnership between the Dutch Ministry of Foreign Affairs and two civil society organisations. Overall coordination and fund

²⁸ http://www.senternovem.nl/energising_development/index.asp

management will be carried out by Hivos and technical advice will be provided by SNV (who developed the approach in Asia) in all programme countries. The programme is centrally funded by the Dutch Ministry of Foreign Affairs (DGIS/DMW) and SNV, and will receive – if required – back-up from the related Dutch embassies.

The programme will be implemented by a national Biodigester Implementation Agency in each country, selected and advised by all stakeholders organised in a stakeholder group. African and national ownership is guaranteed in this way. The programme focuses on implementation in six countries (Burkina Faso, Ethiopia, Kenya, Senegal, Tanzania and Uganda). It uses a multi-stakeholder sector development approach to create a biogas construction sector, involving locally trained contractors and masons who are supported by national vocational training institutions. Biogas digesters do not come cheap, so to reduce the cost barrier, micro-finance institutions will provide loans to the end users and governments will offer an investment incentive. End users are protected against construction errors through a two-year guaranty system. The role of rural development NGOs as well as governmental and private agricultural and live-stock extension services are integrated in the programme.

ABPP targets 70.550 installation/households in total for the six countries in Africa by the end of 2013. The programme will also create new jobs and a new business sector in each country. The budget amounts to approx. € 93 million for four years, 30 millions will be contributed by the ministry, 8 millions by SNV and an estimated 4 millions by governments. The costs of building an installation are between 500 and 800 dollars (excluding programme costs). The construction costs of the biodigesters themselves will be born by the end users, partly in cash and partly through credit. These costs amount to 56% of the total budget. Construction costs are subsidised some 20-30% by the governments. In the future this may be substituted by carbon income of some 25 - 40 € per biogas digester per year.

Public-Private Partnership Nuon-FRES

The Netherlands Ministry of Foreign Affairs contributes \$ 10 million to a programme of the Foundation of Rural Energy Services (FRES) that aims at realizing 85.000 new solar energy connections by 2015. FRES aims to achieve this objective by setting up local energy companies that serve customers with light and electricity by installing solar based systems in households, small enterprises and public facilities, in rural Sub Saharan Africa. The contribution is part of a Public Private Partnership (PPP) in which both the Ministry and the Energy company Nuon both contribute € 10 million to a programme budgeted by FRES at euro 60 million. The PPP provides the first € 20 million. Other funding sources include contributions of recipient countries, local company and external capital. Since 2002 Nuon and FRES are building up experience in South Africa, Mali and recently in Burkina Faso with establishing companies in the countries concerned that provide renewable solar based energy to rural populations. Over the coming years the FRES programme will be expanded to other countries. Angola, Botswana, DRC and Uganda are being considered. Solar energy installations are installed in households and enterprises with a monthly tariff based on a fee for-service concept. Customers choose their service level (number of lamps and plugs). Expected effects on the living conditions of the population include enhanced time for education and economic activities; improved access to means of communication such as radio, TV and mobile telephone; decrease of health problems as a result of decrease in use of energy sources that can cause smoke and fires; increase in production capacity and security.

Sustainable Energy Solutions for Africa SESA: Public-Private Partnership Dutch Ministry of Foreign Affairs, Philips

The Netherlands Ministry of Foreign Affairs has approved a reservation of € 3 million for a Public Private Partnership with Philips aiming at the development and supply of affordable, appropriate and sustainable (renewable) energy services to the poor in 9 countries in Sub Sahara Africa. The total tentative budget for the PPP for the period 2008-2012 is euro 6.3 million of which Philips has committed euro 3 million for product and market development. The types of technologies developed by Philips include rechargeable solar lamps and other lighting devices. The Ministry of Foreign Affairs will contribute Euro 3 million for supply chain support through national NGOs in the countries targeted. The Partnership has started with the provision of subsidy for a pilot in Ghana implemented through the Kumasi Institute of Technology and Environment (KITE) and local retailers, to be implemented between 2008 and end of 2010. The partnership will extend to another 9 countries in Sub Saharan Africa over the period 2008-2012. Steps to this end include the establishment of a covering organisational structure and further formalisation of the partnership; further development of appropriate energy products and services; identification and training of central distributors, local (NGO) partners and (selected by partner NGO's) retailers; establishment of linkages with providers of micro credit; marketing and public awareness; control of results and evaluation. The output and outcome targets for the partnership will be set at a later stage and will depend among others on the cost of the products and services being developed and to be selected.

ANNEX 4 BIOGAS PROGRAMS

Results chain for biogas programs

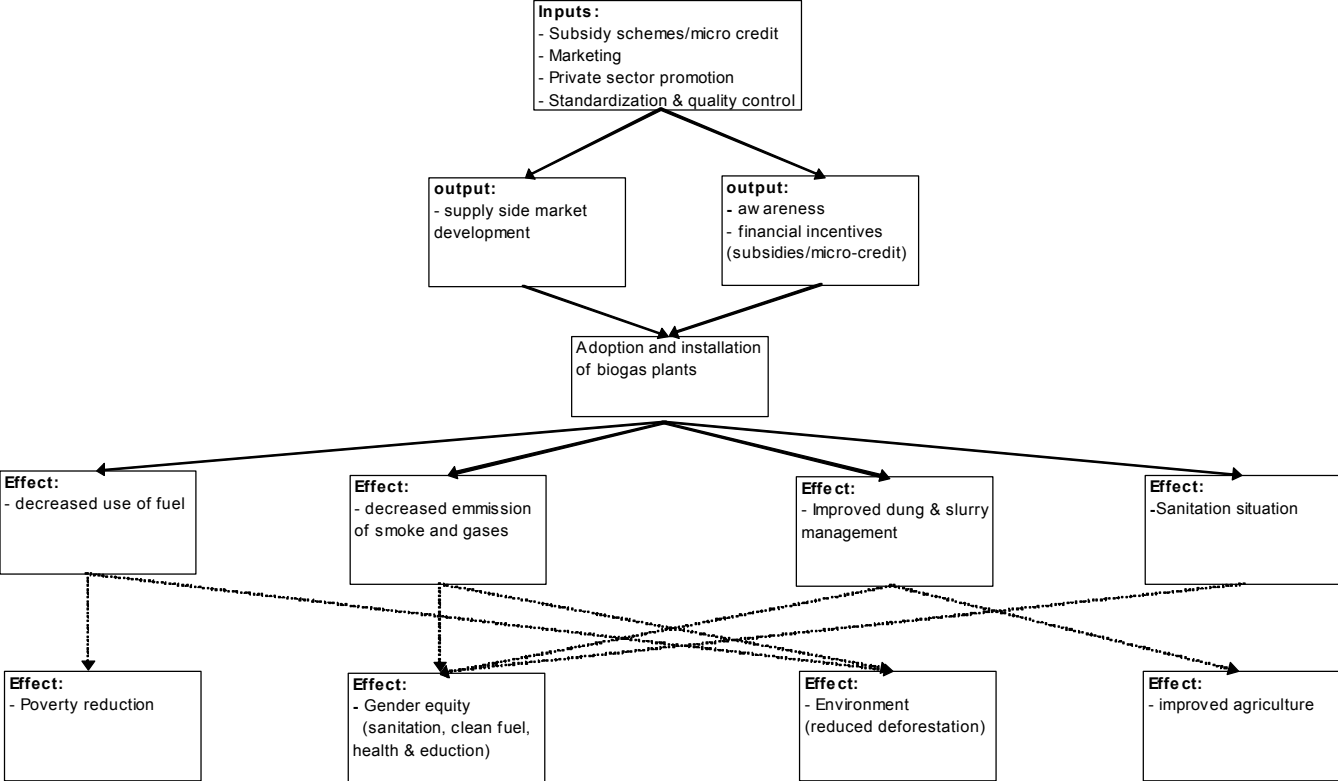
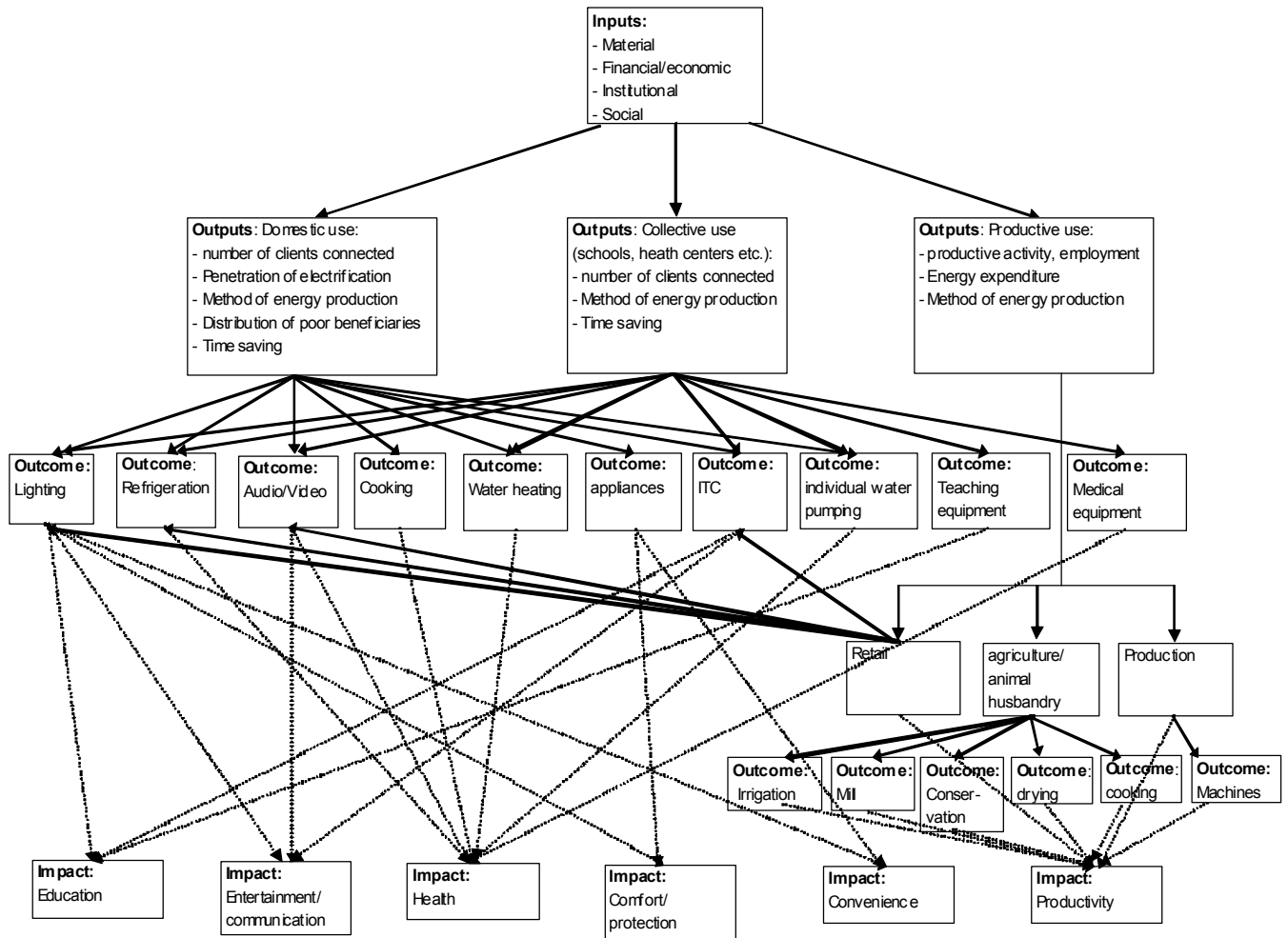


Figure 1 summarizes the major mechanism at work under the implementation of biogas programs/projects. The figure also highlights the effects on individuals and households in different stages identified in the impact evaluation literature. It does not yet include the effects on enterprises that are part of the development of a biogas industry (masons, contractors...).

Research questions on effects of biogas programmes/projects :

- What have been the effects of the Netherlands supported programmes/ projects?
- How many biogas plants have been installed?
- How are the plants installed distributed among different population groups?
- To what extent have installed biogas plants actually been used (gas production)?
- What is the digester feed stock?
- Does the household use the fertilizer? If yes, how?
- For what purposes is biogas used (cooking, lighting)?
- What are the main bottlenecks to proper use of biogas plants (supply of cattle dung, operation)?
- What have been the changes in farming systems, in particular livestock management (free roaming versus zero-grazing, number of livestock, etc.)?
- To what extent has the use of fire wood and other traditional fuels decreased?
- To what extent has this reduced forest and environmental degradation?
- Has there been change in time/workload (m/f)?
- For what purposes has the time saved been used (m/f)?
- To what extent have health conditions (in particular respiratory illnesses) changed, specifically among women and children?
- How have cooking and lighting habits changed due to the use of biogas?
- To what extent has the nutritional status of both adults and children changed?
- To what extent has gender disparity in education changed (more girls attend school)?
- What is the effect of biogas on agriculture (use of fertilizer, crop yields, crops cultivated, sale of fertilizer)?
- What has been the effect on household income?
- To what extent has the use of biogas reduced emission of greenhouse gasses?

ANNEX 5 RURAL ELECTRIFICATION PROGRAMS



Research questions on effects of electrification programmes/projects

Domestic use:

- What has been the change in the number and/or percentage of households that have *access* to electricity?
- What has been the change in the number and/or percentage of households that actually *use* electricity and changes in quantities of use?
- Who decides about the connection, about appliances bought, where appliances are placed?
- What has been the change in the production of electricity?
- How are households with access to electricity distributed among poor and non-poor households?
- To what extent has reliability of electricity supply changed?
- To what extent has expenditures for electricity/alternative power sources changed (distinguishing expenditure per unit of use and total expenditures)?
- For which services is electricity used (communication (radio, TV), cooling (refrigeration) (
- What are the benefits of these services for male/females)?
- To what extent has the quantity of use of these appliances changed?
- What are the main impediments to use of electricity?
- To what extent has school attainment changed (gender disparity)?
- To what extent has communication/entertainment changed?
 - o use of radio
 - o use of television
 - o use of ...
- To what extent has health (by member) changed?
- What has been the effect on total energy expenditures?
- What has been the effect on prevalence of diseases?
- To what extent has safety/protection changed?
- To what extent has convenience changed?
- To what extent have educational attainments changed?

Collective use:

- What has been the change in *access* to electricity?
- What has been the change in the *use* of electricity?
- Who and how many benefit from (improved) services of schools, health centres, street lighting, religious buildings, other.
- To what extent has reliability of electricity supply changed?
- For what purposes (appliances) is electricity used?
- To what extent has the quantity of use of these appliances changed?
- What are the main impediments to use of electricity?
- To what extent has school attendance changed (gender disparity)?
- To what extent has educational attainment changed?
- To what extent has access to health services changed?
- To what extent have health conditions of community members changed (for example, degree of vaccination)?

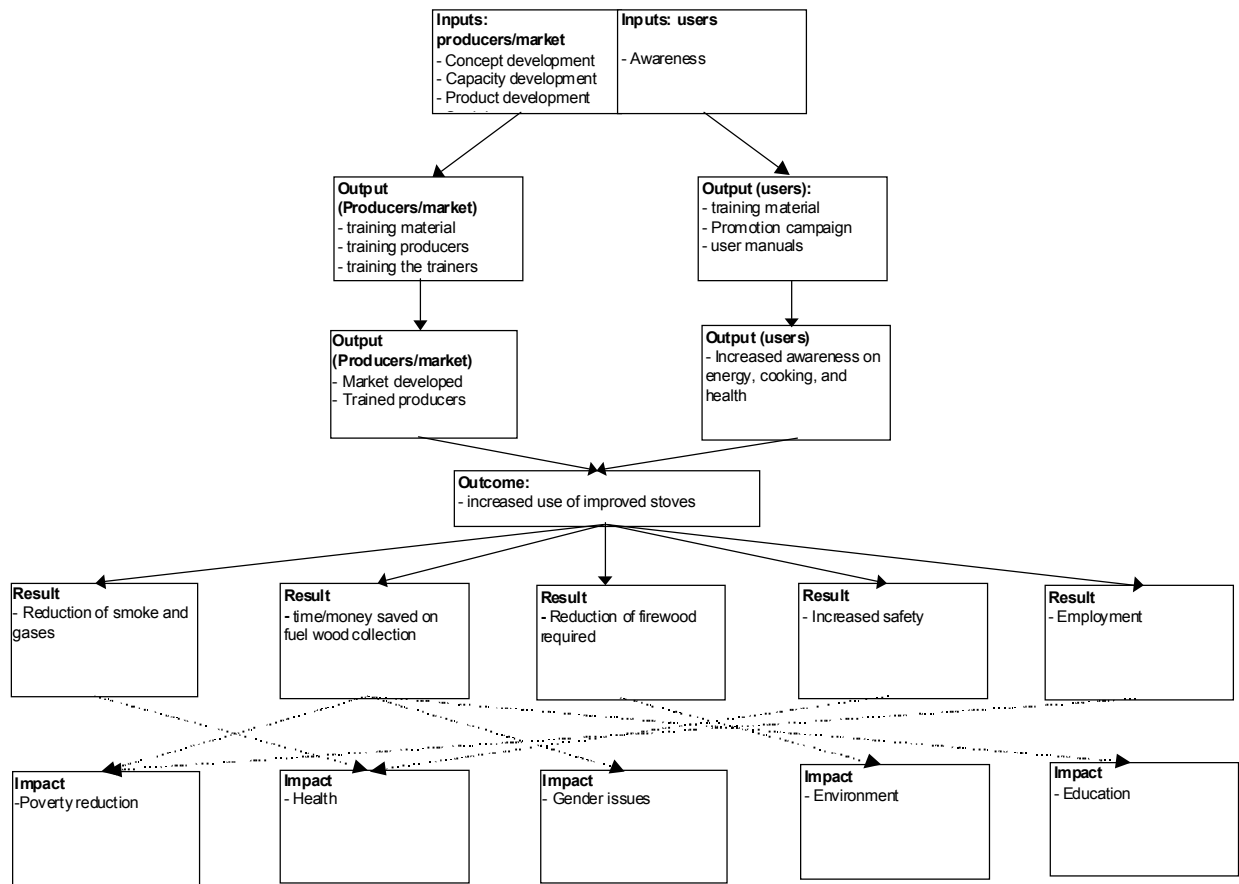
Productive use (agriculture, small enterprises, retail):

- What has been the change in *access* to electricity?
- What has been the change in the *use* of electricity?

- To what extent has reliability of electricity supply changed?
- For what purposes (appliances) is electricity used and by whom (m/f)?
- To what extent has the quantity of use of these appliances changed?
- What are the main impediments to use of electricity?
- Have linkages to other sectors been made? Have specific measures been taken to enable and increase use of electricity for productive uses?
- What new activities have been undertaken and/or what activities have been expanded (and by whom)?
 - o agriculture (crops cultivated, irrigation, ...)
 - o rural business
- To what extent has productivity of these activities changed?
 - o crop yields/crop income
 - o output/profits of business

ANNEX 6 IMPROVED STOVES PROGRAMMES/PROJECTS

Results chain for improved stoves programmes/projects



Research questions on effects of improved stoves programmes/projects

- What have been the effects of the Netherlands supported programmes/projects?
- How many producers of stoves have been trained (or trainers trained – m/f)?
- How many promotion and awareness campaigns have been launched?
- What training materials have been developed?
- What has been the change in the number of producers of (improved) stoves (m/f)?
- What has been the change in the quality of stoves produced?
- What has been the change in the number of households aware of improved stoves, alternative ways of cooking and health consequences (related to smoke inhalation, health effects from fuel wood use such as damage to women's spines, physical and sexual harassment)?
- What has been the change in the number of households using improved stoves?
- Who decided about stove acquisition?
- What is the distribution of users among poor versus non-poor households?
- How much wood has been saved since the use of the improved stoves?
- What benefits have occurred in the household with the new stove (m/f) (e.g. for men faster meals; women cleaner kitchens and vessels and less drudgery)
- What has been the change in the expenditures on firewood and alternative fuels for cooking?
- For what purposes have the saved expenditures been used (by whom and who benefits)?
- What has been the change in time use for collection of firewood?
- For what purposes is saved time used (who benefits)?
- Has gender disparity in education changed through the programmes/projects?
- What is the change in the health situation of household members (m/f)?
- Are there negative impacts of the programme/project?

ANNEX 7 IMPACT EVALUATION METHODOLOGY

Introduction

Impact evaluation is the systematic identification of the effects – positive or negative, intended or not – on target groups and the society caused by a given development programme or project. In order to be able to answer the research questions on effects of development programmes or project, IOB wants to use the techniques of “rigorous impact evaluations”. Using these quantitative (econometrical) techniques, it will be possible to measure the effects of the interventions and other factors.

A main reason, why it is in general rather difficult to assess the effectiveness of programmes and projects, is the problem that other factors may interfere. This interference may, if not taken into account, lead to biased results. Outcomes may be affected by factors other than programme interventions. Two related problems are at stake. First of all, there is the *attribution problem*. Which effects can be attributed to the interventions? Many other factors interfere and may have an impact as well. An unbiased assessment of the effect of interventions upon – for instance – prevalence of disease variables of interest have to take into account external factors such as poverty variation, as these factors may influence prevalence of these diseases as well.

Therefore, one needs to know what the effects would have been without the intervention (treatment). Here one touches upon the problem of the *counterfactual*: how would the prevalence of water and sanitation related diseases have developed without the interventions? What would be needed is a control group, like in medical research. However, in most cases no control group has been selected in advance and it is rather difficult to select one afterwards. How to construct such a control group after the intervention? The control group should have similar characteristics as the group that has been part of the program.

Techniques

In the last 25 years, new statistical evaluation techniques have been developed in order to evaluate the impact of development support at the project level. These techniques solve the problem that in most cases, no control group has been identified in advance, so that it becomes difficult to measure the impact of the project. Moreover, with the use of these statistical techniques it is possible to quantify the influence of other factors, so that the impact at the project level can be isolated.

The classical approach uses *regression analysis*. In a simple regression framework, the ‘impact’ is analysed as a mathematical function of characteristics and (possible) influences. For instance, energy supply outcomes may be related to the availability of a micro credit facility. In a multivariate equation, one may be able to estimate the impact of the different factors and isolate the effect of the interventions.

Impact will be determined by regressing differences in outcome or impact variables on differences in the interventions from which they have benefited and taking into account other (exogenous) factors. However, some factors may be *unobserved* (excluded from the analysis because there are no (quantitative) data. This may be a problem when they are correlated with

factors that are included in the equation. Such a correlation may lead to overestimation of the impact of the observed variables. The proposed evaluation will deal with unobserved variables by looking at changes rather than levels of outcomes. Wherever possible the analysis will be based on outcome and impact *changes*, thereby eliminating unobserved fixed effects.

The method of double difference aims to eliminate a ‘selection bias, or: the elimination of differences when participants of a programme or project differ from a control group. The method measures differences between two groups, before and after the intervention (therefore the name double difference).

Data requirements

The evaluation study will partly rely on availability of relevant statistical information and partly on direct data collection through a survey among users, interviews of providers of impact data (such as health centres) and through interviews of stakeholders and other informants.

Qualitative analysis

Although the study will make use of statistical techniques, this will be combined with analyses of qualitative data collected through the study of documentation, the survey, focus group discussions and interviews.