

**Strategic Evaluative Review of the
Energising Development Partnership Programme
Long Version**

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St. Gallen, June 20, 2018

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Table of Content

1. SUMMARY	7
2. OBJECTIVES AND METHODOLOGY OF THE STRATEGIC REVIEW	10
3. STRATEGIC ASSESSMENT OF THE PROGRAM ACCORDING TO THE OECD DAC CRITERIA.....	10
3.1. Description of programme design, strategic approach and logframe	10
3.2. Relevance	12
3.2.1. Compliance and alignment with international policy objectives: Paris Agreement and Agenda 2030	12
3.2.2. Relevance for the target group	13
3.2.3. Relevance for EnDev Donor Agencies	14
3.2.4. EnDev's current position in the global development landscape.....	15
3.3. Effectiveness.....	20
3.4. Efficiency	27
3.5. Scalability based on today's "benchmarks"	31
3.6. Impact	33
3.7. Sustainability	37
3.7.1. Building up and strengthening local capacities	38
3.7.2. Alignment with / change within partner countries: contribution to "transformational changes"	40
3.7.3. Recycling / disposal of electronic waste and batteries	43
3.7.4. Environmental impact of improved cookstoves	44
4. STRATEGIC ASSESSMENT OF PROGRAM GOVERNANCE AND MANAGEMENT.....	44
4.1. Governance and management structure	44
4.2. Portfolio management and steering of the program.....	48
4.2.1. Rules and procedures.....	48
4.2.2. Available funds and budget management	49
4.2.3. Number of countries: entry and exit strategies	50
4.2.4. Selection and upscaling of individual projects and role of implementing partners.....	52
4.3. Quality control and performance assessment.....	53

5. RECOMMENDATIONS AND STRATEGIC BUILDING BLOCKS.....	56
5.1. Achievements, strengths and added value of EnDev	56
5.2. Contribute to transformational change	57
5.3. Develop portfolio strategy and translate it into M&E system	58
5.3.1. Develop portfolio strategy	58
5.3.2. Translate into M&E system	61
5.4. Secure funding, specify entry & exit strategies more clearly and strengthen implementation structure .	64
5.4.1. Secure Funding.....	64
5.4.2. Specify entry and exit and entry strategies more clearly.....	67
5.4.3. Strengthen implementation structure	68
5.5. Structure knowledge management and innovation	70
5.6. Develop strategic outreach	72
6. BIBLIOGRAPHY	74
7. ANNEXES.....	76
7.1. Main takeaways from the online survey.....	76
7.2. List of interview partners.....	95

Tables

Table 1: Overview of technologies supported by EnDev projects in 2017 ([2], p.15).....	11
Table 2: Comparison between SDG7 targets and EnDev outcomes	13
Table 3: Logframe and achievements	21
Table 4: New indicators (in red) - which had been fixed based on a defined budget - and their status of achievement	23
Table 5: Strengths and weaknesses of the EnDev Programme as expressed by interviewees and in the online survey.....	24
Table 6: “controllable efficiency parameters” and EnDev’s measures to address these parameters.....	27
Table 7: Cost per person for different technologies: investment cost and “EnDev cost to facilitate access”	32
Table 8: Achievements of impacts	34
Table 9: EnDev’s contribution to (structural and mind set) changes.....	42
Table 10: Overview on issues of RVO/GIZ co-management	44
Table 11: Division of EnDev funds	50
Table 12: Overview Number of activities and countries 2014 – 2017	51

Figures

Figure 1: Survey result on extent to which project activities contribute to more gender balance (within government institutions, in SMEs and at beneficiary level	36
Figure 2: Feedback from Implementing Partners on whether local capacity building and strengthening are appropriate to achieve intended results.	39
Figure 3: Feedback from Implementing Partners on extent to which they consider the outcomes (in the specific field) to be sustainable.....	40
Figure 4: Cost ranges of PV systems in Africa (2009-2016) [14]	43
Figure 5: Satisfaction of Implementing Partners on cross-country learning, M&E support and backstopping.....	49

Abbreviations

ADES	Association pour le Développement de l'Energie Solaire Suisse
AEEP	Africa EU Energy Partnership
AP	Annual planning
AREI	Africa Renewable Energy Initiative (Trustee AfDB)
BMZ	German Federal Ministry for Economic Cooperation and Development
CAT	Country analysis tool
CC	Climate Change
DFAT	Australian Department of Foreign Affairs and Trade
DFID	UK Department for International Development
DGIS-MFA	Directorate-General for International Cooperation of the Netherlands Ministry of Foreign Affairs
DVT	Data visualisation tool
EnDev	Energising Development Partnership
ESMAP	Energy Sector Management Assistance Program, World Bank
EUEI-PDF	European Union Energy Initiative-Partnership Dialogue Facility
GACC	Global Alliance for Clean Cookstoves
GB	Governing Board
GCF	Green Climate Fund
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GP	Global Program
GPE	Green People's Energy („Grüne Bürgerenergie“)
GPOBA	Global Partnership on Output-Based Aid
GTF	Global Tracking Framework
HERA	(former) Household Energy Programme (of GIZ)
HIVOS	Humanistisch Instituut voor Ontwikkelingssamenwerking
HQ	Headquarter
ICS	Improved cookstove
IDCOL	Infrastructure Development Company Limited, Bangladesh
IP	Implementing Partners
IWA	International Workshop Agreement
LDCs	Least Developed Countries
MAEVE	Malawian local NGO
MDB	Multilateral Development Bank
MDC	Middle Income Countries
M&E	Monitoring & Evaluation
MFA-NOR	Norwegian Ministry of Foreign Affairs
MHP	Micro and mini hydropower
MTE	Mid-term evaluation

MTF	Multi-tier Framework
(I)NDC	(Intended) Nationally Determined Contribution
NPO	Non-profit organisation
OCS	Outcome Calculation Sheet
PA	(British international non-governmental organization) Practical Action
PU	Productive use
PV	photovoltaic
RBF	results-based finance
RE	Renewable energies
RECP	Africa-EU Renewable Energy Cooperation Programme (under EUEI PDF)
RVO	Rijksdienst voor Ondernemend Nederland, Netherlands Enterprise Agency
SDC / DEZA	Swiss Agency for Development and Cooperation
SDGs	Sustainable Development Goals
SE4ALL	Sustainable Energy for All
SHS	Solar Home System
SI	Social infrastructure
SIDA	The Swedish International Development Cooperation Agency
SNV	Stichting Nederlandse Vrijwilligers, Netherlands Development Organisation
SREP	Scaling Up Renewable Energy Programme
SSA	Sub-Saharan Africa
TVET	Technical and Vocational Education and Training
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
WB	Worldbank
WHO	World Health Organization

1. Summary

The present report critically reviews the EnDev Programme following the OECD DAC criteria, namely relevance, effectiveness, efficiency, impact and sustainability and assesses the governance and management of the EnDev Program. Based on the assessment, it gives a number of recommendations and suggests strategic building blocks. The authors base their assessment and appraisal on the perusal of reports, more than 20 interviews with EnDev's donor agencies, cooperating partners, implementing partners and EnDev's management as well as an online survey (with 35 participants). The assignment did neither include a portfolio review nor a detailed assessment at country level due to the ToR and the scope of the strategic evaluative review at global level.

- Relevance: **The strategic assessment according to the OECD DAC criteria** showed that EnDev is of high **relevance** for the target group. It is well aligned with the various policies of its donor community, particularly regarding international agreements like Agenda 2030 and Paris Accord. The statements made by the different interviewees prove a really outstanding position of EnDev in the so-called **development landscape**. EnDev is one of the few programs with long-term experience in broad implementation of activities facilitating energy access for the poor. It is known for its flexible and pragmatic approach. Interviewees from cooperating partners SE4ALL, ESMAP / WB, GACC and EUEI PDF confirmed that there is strong interest in a **closer and strategically well-defined cooperation**. On the other hand, EnDev's own expectations towards these organisations and initiatives still remain to be figured out. A systematic in-depth analysis is needed to identify possible added values EnDev could get from the various partners to thus finally strengthen its role in the global development landscape.
- Effectiveness: EnDev is a very professionally and **effectively** managed and implemented global program which at the end of 2017 over-achieved its original main goal to facilitate access to modern energy to 15 million people by 3.22 million (total of 18.22 million). Access to modern energy technologies and services gives poor people the chance to improve their living conditions. Furthermore, the program has a number of additional **positive development results/impacts** like gender, health and economic development.
- Efficiency: Through its performance-based approach and a unique monitoring system the program is steered towards **high efficiency**, thus setting a good example also for other international organisations and initiatives. A mixture of project interventions, complementarity of cost coverage, cooperation with local implementation partners, flexible fund allocation and a lean management contribute to the efficiency of EnDev. Measures which would allow to improving efficiency further are intensified knowledge sharing, building up of even more local capacities, and closer exchange and harmonisation with other (national and international) stakeholders.
- Impact: EnDev achieved significant **impacts** through increased efficiency in the cooking and lighting sectors, reduction of air pollution and related health problems, reduction of climate-damaging emissions, strengthening of capacities and development of pro-poor markets for improved cookstoves and off-grid solar products.
- Sustainability: The results of the program are to a large extent **sustainable** because it capacitates entrepreneurs and individuals selling and maintaining energy products and services and contributes to market development. As in many other programs, sustainability problems exist in case of rural micro-grids and electrification of schools and health centres. Sustainability could be improved through stronger embedding of EnDev activities in the respective national energy sector context and supply concept. The risk of such efforts would be that EnDev might

lose its implementation focus. Therefore, EnDev should continue to well balance the implementation focus and policy advice.

- Governance and management structure: The assessment of the governance and management of EnDev showed that the program has a lean and appropriate management setup. With the recent changes in the set-up the management has been well-adapted to the changed organizational requirements. EnDev' management in Europe operated at slightly below 7% of the total programme expenditures. Members of the Governing Board (meetings twice a year) bring in their points of view subject to their country's policy lines. This mainly affects decisions with financial consequences and thus has an impact on EnDev operating flexibly with the funds put at its disposal. A workspace the so-called "EnDev Wiki" is made available by Energypedia for all EnDev staff. Currently, about 380 EnDev staff members are on the Wiki and thus also have access to the knowledge platform [Energypedia](#).
- Portfolio management and steering of the program: EnDev has well-defined work responsibilities with respect to standard services: finances, outcome monitoring, impact monitoring, knowledge management, human resources, backstopping, during planning and implementation. EnDev management makes quite an important administrative and accounting effort to ensure smooth implementation of the significant number of projects in the various countries. Less earmarking and more long-term commitments from donors would alleviate these problems, reduce administrative cost and allow increasing efficiency. The management, in close cooperation with the Governing Board, defined "entry and exit criteria" and a specific procedure and criteria for upscaling of activities.
- Quality control and performance assessment: EnDev applies a high end, rather conservative, reliable and transparent **monitoring system** which is at the same time a strong steering instrument. EnDev's outcome orientation and gradually optimized monitoring system are appreciated by most "outsiders". "Insiders" who need to meet the set outcome figures see advantages but also limitations in their freedom to invest in more complex and "not immediately fruitful" activities.

The second part of the report lists and elaborates on a number of **recommendations and strategic building blocks** deducted mainly from the results of the key stakeholder interviews and of the online survey but also from information drawn from various reports.

To actually play a more important role and increase its impact EnDev should:

- I. Contribute to transformational change: EnDev should intensify – where appropriate – efforts for transformational changes either with (governmental / other) cooperation partners or based on own activities.
- II. Develop portfolio strategy and translate it into M&E system: EnDev should make use of the offered flexibility of EnDev donors with regard to the 20 Euro/person benchmark by now **adapting its portfolio strategy and thus also its outcome figures** in favour of a certain strategic re-orientation towards stronger focus also on:
 - poverty reduction through **income-generation** and local economic development,
 - (better) **supply of social infrastructure**, but also
 - recycling or at least save disposal of **electronic waste**.

These foci would accommodate the interlinkage of SDG7 with other development goals. It would neither turn the general EnDev approach inside out nor spoil the outcome-orientation. Aspects like e.g. supply of SMEs and job creation are already part of the indicators, however, they need to be broadened to **income-generation** and **involvement of the local private sector**,

while the international private sector is rather to be called in for provision of products/services not available (at the required quality) locally and/or to provide knowledge and technology transfer and build up local capacity. If it is decided to bring the above-mentioned aspects to the **same level of importance with “access to modern energy”**, this would need to be reflected in the outcome figures to be accommodated with the required budget.

In the monitoring system: **clearly separating** a) cooking energy, b) off-grid electricity and c) mini grids / grid connection in the outcome figures and separately present their respective added values; **incentivising multiplier effects** (“multiplication factor” instead of reduction due to “contribution factor”) and improve **transparency on cost** of “soft services” versus “hardware”.

- III. Secure funding: EnDev should strengthen its **existing and establishing new partnerships** with those players (international organisations, government agencies etc.) who can replicate EnDev’s approach/es and who can benefit from its lessons learned. Finally, partnering can also facilitate the required policy changes and create / strengthen ownership by local partners, both often vital to bring markets to scale and increase the sustainability of interventions.
- IV. Specify entry and exit strategies more clearly: EnDev should well define entry and exit strategies, also for multi-country activities.
- V. Strengthen implementation structure: EnDev should well define the selection processes of **implementing partners** and project (upgrading) proposals to guarantee **fair competition, result-oriented selection** and **flexibility** for the management.
- VI. Structure knowledge management and innovation: EnDev should take a strategic decision on the importance of knowledge management and assign (at least) a 1% share of the budget. This allows to (even more) systematically analysing **lessons learned** and disseminating it **more pro-actively** e.g. through Energypedia to achieve **multiplier effects**, increase its own **visibility** and to **impact in international discussions** (e.g. lobbying for improved cooking energy systems, linking climate topics to pro-poor approaches).
- VII. Develop strategic outreach: EnDev should develop an updated communication strategy and transfer it into an action plan to achieve **strategic outreach**.

The current report is the result of a “Strategic Evaluative Review”. A more in-depth evaluation also on country level and a more thorough assessment which allows consideration of technology-specific program aspects would certainly yield more specific and concrete recommendations which can more easily be “translated” into action.

2. Objectives and methodology of the strategic review

The multi-donor Energising Development Programme (EnDev) is currently in its second phase (2009-2021) which directly followed the first phase (2005-2009). Now, at mid-term, EnDev's strategy is being reviewed to accommodate changes in the global energy access agenda. Part of this review is an external assessment of the EnDev programme, of its relevance, its performance, its structures, its alignments, and its management. This serves to identify ways to further improve the programme strategy and implementation. Overall objectives are: 1) to review progress against objectives, 2) assess strengths and weaknesses of EnDev, compile lessons learned and give recommendations, 3) assess the added value of EnDev for donors, for international initiatives in support of the Agenda 2030 and Paris Agreement, as well as partner countries, 4) assess to which extent EnDev influenced transformational changes in partner countries and in the global energy access agenda and 5) develop options for EnDev's future strategy towards scaling its impact on the **universal energy access** ambitions, the national and global **energy transformation(s)**, and **social and economic development** of its target groups.

The current review work covers the period July 2013 to June 2017. The applied methodological approach consisted of four main pillars:

- **review** of a number of reports
- exchange during the **Governing Board Meeting** (21.11.17)
- **online survey** among implementing partners to get also more quantitative information for the strategic evaluative review of the programme (out of 39 addressees 32 persons from 24 EnDev countries and 2 from Germany/The Netherlands participated); complete results in the Annexe 7.1
- **21 comprehensive stakeholder phone / skype interviews** with 6 donor agencies, 4 current partners, 6 selected implementing partners, 2 energypedia staff as well as one group and 2 individual interviews with the managing organisations GIZ and RVO

All collected information has been compiled and analysed to lead to the present report. Since it was agreed with the interview partners that in general no reference will be made to specific personal statements, no summaries of individual interviews are provided in the current report.

Chapter 3 and 4 mainly provide the review part whereas Chapter 5 summarises recommendations and strategic building blocks.

3. Strategic assessment of the program according to the OECD DAC criteria

3.1. Description of programme design, strategic approach and logframe

Energising Development (EnDev) is an energy partnership program funded mainly by 6 donor countries. It promotes sustainable **access to modern energy products and services that are affordable, meet the needs of the poor, and create positive economic, social and/or environmental impacts** ([1], Annex 1, p.3). Target groups of EnDev are poor households, social institutions and small and medium enterprises in selected developing countries.

EnDev promotes access to modern energy through grid connection, mini-grids and off-grid technologies and products (including improved cookstoves). All forms of energy services have different specific features requiring an appropriate approach ([1], Annex 1, p.4).

According to the original logframe (as presented in the EnDev Strategy paper 2014-2018), the program is successful, if until 2018, 15 million people are enabled new access to modern energy services against a maximum average of € 20 program costs per person, (€ 7,50 for cooking, and € 45 per electrification). Additionally, 15,000 social institutions and 25,000 SMEs shall be reached by the program. Gender equality is observed as crosscutting theme ([1], Annex 1, p.7). Further target indicators are set on the reduction of health threatening emissions, achievement of quality criteria for the promoted energy technologies, increased turn-overs of enterprises as well as climate friendliness of the promoted technologies (see also 3.3). Later, the logframe was modified and quantitative targets defined according to the program budget, which was changing over the time.

By mid-2017, EnDev comprised of 31 projects in 25 countries and of side activities in 5 additional countries. 21 of these 31 projects concern the support to improved cooking systems, 18 projects to off-grid solar technologies (SHS, pico PV), 10 to mini-grids (solar/hybrid or hydropower), 11 projects to grid extension, and another 5 projects to biogas ([2], p.15). Table 1 gives an overview on the technologies supported in the various countries.

Table 1: Overview of technologies supported by EnDev projects in 2017 ([2], p.15)

		stoves	biogas	other cooking/thermal	SHS	picoPV	solar mini-grid	hydro mini-grid	grid	other lighting/electricity
country projects	Bangladesh									
	Benin									
	Bolivia									
	Burkina Faso									
	Burundi ⁵									
	Cambodia									
	Ethiopia									
	Ghana									
	Indonesia									
	Indonesia biogas									
	Kenya									
	Liberia ⁶									
	Madagascar									
	Malawi									
	Mali									
	Mozambique									
	Nepal									
	Peru									
	Rwanda									
	Senegal									
	Tanzania									
	Uganda									
	Vietnam									
multi-country projects	BD, KE, RW, TZ, UG ⁷									
	Central America (HN, NI) ⁸									
	Kenya, Tanzania, Uganda									
	Malawi, Mozambique									
	Mekong (KH, LA, VT)									
	Sub-Saharan Africa (MOZ, UG)									
	Cooking sector support and coordination (BD, GH, KE, UG)									
	Refugee activities (KE, ML, SO,TZ,UG)									

3.2. Relevance

This subchapter analyses to what extent the EnDev Programme aims at the solution of a core problem of the target groups. Since EnDev's overall objective as formulated in the preceding subchapter is to a large extent congruent with the Sustainable Development Goal SDG7 and given the fact that EnDev focuses on the energy-poor (LDCs and poor in non-LDCs), it is as such addressing a core problem of that target group. Furthermore, the SDGs have been decided by the community of states, so such SDGs can be considered to be in line with the partner countries' policies as well as with the donor countries' development cooperation strategies. In the following, the compliance of EnDev with the Agenda 2030 as well as with the Paris Agreement, and the relevance for the target group and for the donor agencies' are analysed more in detail. In the last paragraph, the relevance and importance of EnDev in the dynamically changing development context are explored.

3.2.1. *Compliance and alignment with international policy objectives: Paris Agreement and Agenda 2030*

Agenda 2030

On 1 January 2016, the [17 Sustainable Development Goals \(SDGs\)](#) of the [2030 Agenda for Sustainable Development](#) officially came into force. Over the next 15 years, with these new Goals that universally apply to all countries, efforts will be mobilised to end all forms of poverty, fight inequalities and tackle climate change, while ensuring that no one is left behind [3].

Paris Agreement

In 2016, also the Paris Agreement entered into force. Its aim is to strengthen the **global response to the threat of climate change** by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to **deal with the impacts of climate change** (earlier called adaptation).

Already from the overall objectives it is obvious that both agendas are **very closely interlinked**: The Agenda 2030 includes the "tackling of climate change" and the Paris Agreement strives to promote renewable energies and to "strengthen the ability of countries to deal with the impacts of climate change". In addition, several SDGs (1, 2, 11) refer to climate change and SDG 13 makes even targets "combatting climate change and its impacts". There is a general agreement among the EnDev donors that EnDev should address both agendas in parallel.

The results achieved so far (see 3.3) show that EnDev contributes **significantly to the Agenda 2030** through its effort to achieve SDG 7 (main target). But EnDev to an important extent also contributes to: SDG 3 (reduced emissions of ICS), SDG 4 (better lighting of homes), SDG 5 (easier and healthier cooking), SDG 8 (job creation and energy supply for SME), SDG 13 (CO₂ reductions) and SDG 17 (cooperation with and capacity building for local partners). With regard to the **Paris Agreement**, EnDev currently claims a yearly reduction of CO₂ eq emissions of 1.9 million tons. 95% of specified avoided CO₂ eq emissions stems from the use of improved cookstoves, whereby EnDev acts on the **very conservative assumption** that one ICS on average avoids 0.54 t of CO₂ eq per year. Other organizations start from 2 tons per ICS (World Bank). In addition, the focus on renewable energies and energy efficiency increases people's resilience against negative effects of climate change.

3.2.2. *Relevance for the target group*

This paragraph briefly summarises the main relevance for the target groups with regard to the SDG 7. A more comprehensive and also qualitative assessment of the effectiveness of EnDev's work is provided in paragraph 3.3.

For EnDev, especially Goal 7 of the Agenda 2030 is essential, because this goal aims to: Ensure access to affordable, reliable, sustainable and modern energy for all. The following table compares the EnDev outcomes with the targets under SDG 7.

Table 2: Comparison between SDG7 targets and EnDev outcomes

SDG7 targets	EnDev outcomes
<ul style="list-style-type: none"> Ensure universal access to affordable, reliable and modern energy services 	<ul style="list-style-type: none"> EnDev's pro-poor approach does contribute to universal access to modern energy services, in which affordability and reliability are key features.
<ul style="list-style-type: none"> Increase substantially the share of renewable energy in the global energy mix 	<ul style="list-style-type: none"> EnDev's emphasis on promoting renewable energy technologies already contributes to increasing the share of renewable energy in the global mix.
<ul style="list-style-type: none"> Double the global rate of improvement in energy efficiency 	<ul style="list-style-type: none"> EnDev's emphasis on cost-efficient implementation includes having a keen eye on energy efficient solutions, but access to energy is the mainstay of the program.
<ul style="list-style-type: none"> Enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology 	<ul style="list-style-type: none"> As a partnership program of 6 donors EnDev is an excellent example for a close international cooperation and harmonization of energy activities. The cooperation between different organisations is also taking place on implementation level, where several international as well as national organisations are coordinating their activities.
<ul style="list-style-type: none"> Expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support 	<ul style="list-style-type: none"> EnDev contributes through market development (ICS, smaller PV appliances, biogas systems) and infrastructure expansion (grid extension, mini grids). Through its work on different tiers it addresses technology upgrade. EnDev's focuses on LDCs and consequently applies a pro-poor approach.

It can be concluded that **the 5 targets linked to the fulfilment of Goal 7 go well in parallel with EnDev's main outcome**. EnDev will be one of the (international) parties that will make a major contribution to these targets: its outcome-oriented and performance based-character makes the program highly relevant.

To give an **example which illustrates the relevance for the target group**, the case of Malawi provides interesting insights on what EnDev does on the ground. With more than 6 million people living with less than 1 USD/day, Malawi is an extremely poor country. Most people cook on a 3-stone-fire although an ICS could save 40% of the scarce firewood. Most of the groups who produce ICS are actually farmers who produce ICS as a (seasonal) side activity for some additional income. The limiting factor is the transport and logistics to reach a broader market, the latter being currently supported and subsidised by EnDev. The target is to create and stabilise a market for ICS (ICS should become the “baseline”) which provides not only additional income for the stove producer groups but also improves women’s health situation and reduced firewood consumption. Production cost for an ICS is 1 USD and it is sold (with subsidies on transport) at 2 USD, still a price which is not affordable for about 1.7 million people in Malawi. One could argue that due to the subsidisation the system is not (yet) sustainable. However, awareness raising on the customer side to increase their willingness to pay so that also transport cost can be covered as well as improvement and better organisation of transport, are leading into the right direction. In addition, the ICS was integrated in the “Social Cash Transfer Program” of the Malawian Government through provision of a voucher, thus allowing the poorest of the poor to get an ICS for free.

In three other countries (Tanzania, Indonesia and Kenya) which had been looked at exemplarily, EnDev concentrates on market development to provide sustainable energy access. In Kenya and Tanzania, the rural poor were targeted, and this was also reflected in the access technologies promoted i.e. ICS and off-grid pico-solar. In the case of Indonesia, no strict pro-poor approach was pursued, as the biogas technology cannot be offered to the poorest households: this technology requires households that possess livestock needed to feed biogas digesters. Still, the more than 7,000 installed biogas digesters enable the benefitting rural households to replace the use of firewood to 85%, and to 15% of LPG. The new cooking systems do not only significantly reduce household expenditures but are in addition more environmentally friendly.

3.2.3. *Relevance for EnDev Donor Agencies*

All *donors* involved in the EnDev partnership consider the programme being in line with their energy policy priorities. The focus on access to energy through promoting renewable energy for some stems from their **climate change** (reduce global emissions AND create more climate resilience), **renewable energy and energy efficiency** agendas; for others, it is linked to **poverty alleviation** through energy access and in particular their commitment to contribute to the **Agenda 2030**. For all donors, the **implementation focus** and the achievement of clear targets is (one of) the most important aspect(s); some complement it with other (bilateral or global) more policy-oriented programs. The Netherlands have own target figures to be fulfilled where EnDev as a Programme provides a significant contribution. Besides the performance based character, also the open eye for **pioneering opportunities** is highly appreciated. In the context of poverty alleviation, the specific aspect of **job creation and productive use** of energy seems to gain more and more importance for some donors. In general, also **transversal approach**, meaning the integration of the RE and climate policy into development is considered important.

There are differences in the **geographical orientation**: some donors are focused on Sub-Sahara Africa, whereas others include Latin American countries and Asian Countries as well. In the last case, it includes some middle-income countries, besides least developed countries.

3.2.4. *EnDev's current position in the global development landscape*

Worldwide a variety of initiatives, programs and funds, which are relevant for EnDev, has been established and the overall number is even continuously increasing. Some of the most important ones are:

- *Sustainable Energy for All SE4All (initiative of the UN General Secretary)*
- *Energy Sector Management Assistance Program ESMAP / WB*
- *Global Alliance for Clean Cookstoves GACC*
- *European Union Energy Initiative-Partnership Dialogue Facility EUEI PDF, with its service line "RECP" - Africa EU Renewable Energy Cooperation Program [4]*
- *Lighting Global (IFC Programme)*
- SREP Scaling up Renewable Energy Program
- AREI Africa Renewable Energy Initiative [5]
- NDC partnership [6] wide range of TA and financial support initiatives
- 1 Gigaton Coalition [7]
- Energy Africa Campaign (DFID; mainly on policy and regulatory aspects and technical and financial support to companies for off-grid solar)
- "Light Up and Power Africa" under the High 5 of the African Development Bank [8]
- Green Climate Fund GCF [9];
- Climate Investment Fund CIF; „Scaling Up Renewable Energy Program SREP“¹ is part of CIF
- Power Africa Initiative²

Currently, main cooperation partners of EnDev at global level are the five written in italics.

The information and statements on the respective organisations/initiatives and their cooperation with EnDev as presented in the following paragraphs, are mainly **based on interviews with representatives from the respective organisation and do neither provide "the whole picture" nor do they reflect the opinion of EnDev management**. The following paragraphs do NOT provide conclusions from the evaluators either. However, based on these different perspectives and opinions heard during the interviews as well as other different pieces of information, the evaluators elaborated on recommendations and strategic building blocks (see chapter 5).

SE4ALL (established in 2011), which has a new secretariat since 1.5 years, has restructured its partnerships recently and EnDev is considered by the secretariat a relatively new partner of SE4ALL. SE4ALL offers six so-called platforms/accelerators for cooperation with the goal to include interested stakeholders to commit to specific work streams which as such are aimed at "delivering" (NO knowledge sharing platforms) by 1) avoiding overlaps in participants' work, 2) identifying two or three areas where

¹ The \$839 million Scaling Up Renewable Energy in Low Income Countries Program (SREP), a funding window of the CIF, is empowering transformation in developing countries by demonstrating the economic, social and environmental viability of renewable energy [44].

² <https://www.usaid.gov/powerafrica/aboutus>

the stakeholders are strong together and what they can carry to the field, 3) advocate financing to be brought to the respective initiatives. EnDev is currently part of the “people-centred accelerator” (addressing access to energy, last mile activities as well as most vulnerable people, including the gender topic). SE4ALL **considers EnDev as a very important partner**, because it is engaged “on the ground”, whereas many other partners are rather doing research, knowledge management etc. EnDev brings in valuable first-hand knowledge and experience on implementation. In that respect, EnDev’s voice among the 42 partners of the “**people-centred**” platform is considered crucial. SE4ALL plans to create a second new platform, the so-called “**electrification accelerator for Africa**” to be led by ENEL / Italy. EnDev is expected to also become a strong partner in this platform. Main foci will be policy, regulatory, licencing and similar topics to finally levelling the playing field of centralised planning and off-grid / mini grid solutions.

The Energy Sector Management Assistance Program **ESMAP** is a special program of the WB Group supported by 17 partners. It does not have its own country projects but rather supports the WB projects by supporting the Technical Assistance teams, by providing knowledge work, best practices etc. Some time ago, ESMAP scaled up its support to SE4ALL through technical assistance work and by hosting a knowledge hub. The latter encompasses the preparation of the **Global Tracking Framework GTF**. The GTF is a special reporting format to measure progress towards reaching the SE4ALL goal which then became the SDG7. The GTF is using statistical data from the WB, IEA and different UN organisations based on a “binary measuring system” looking at whether people have access to electricity or not and to clean cooking or not according to defined criteria. The WB worked in parallel on a new system that considers energy access a gradual process with different tiers of access. EnDev is in close discussion with WB provided valuable lessons learnt from the EnDev monitoring system. As a result of the discussions a **Multi-Tier-Frameworks MTF** was developed, which was presented in the GTF reports and shall either complement or replace the binary statistical data. For electricity the MTF is well developed (and applied by EnDev) whereas for cooking the MTF methodology is only close to be finalised and discussions between WB, EnDev and WHO are still ongoing³. Currently, the WB is carrying out household surveys in several countries and collecting data from national partners to describe in detail where each country stands with regard to access to electricity and modern cooking according to the MTF system. EnDev applies the MTF to measure the results of its interventions. ESMAP knows that EnDev does its monitoring very seriously and thus provides valuable data complementary to the surveys. Currently, ESMAP tries to gradually introduce the MTF also in national surveys, so that on the long run, also the GTF can be based on the MTF to get a more detailed picture of “access” (in the cooking and electricity sector). Apart from the cooperation on the MTF, in many countries where WB/ESMAP and EnDev are active (some) cooperation has been established, in some cases through “energy sector working groups” in which both normally participate. The WB always works through government institutions and before starting an intervention, normally consults others to assess which activities so far have been successful or did fail. E.g. in Kenya where the Government wanted to establish a RBF (Result-Based Financing) program for solar products in more remote areas, WB/ESMAP integrated EnDev’s lessons learned. In general, EnDev is considered as a program which comes up with innovative ideas on how to expand access and is thus a “**good laboratory to try something out for others to build on that experience**”. So far, ESMAP is very satisfied with the cooperation with EnDev, also beyond MTF. Discussions are also

³ WHO mainly established quality standards for cookstoves as such (be it used in a laboratory or in the field) whereas in the MTF developed by GACC and EnDev the cookstove as such is only ONE element in a system which also includes the environment in which the stove is used (ventilation of the cooking space, affordability and availability of the fuel etc.).

ongoing about “**Lighting Africa**” (implemented in partnership with ESMAP) where there is also potential for mutual leveraging. On a country level, the success of cooperation often depends on personalities. More should be done with regard to **pro-active sharing of lessons learned**. So far, cooperation on all levels (global, management and country level) has been very positive, also because most EnDev staff is very passionate about their work, eager to implement activities and very collaborative.

As described by the interviewed GACC representative, the Secretariat of the **Global Alliance for Clean Cookstoves GACC** and EnDev so far cooperate in three different ways: 1) e.g. in Bangladesh, Kenya and Ghana EnDev and GACC are “parallel partners”, meaning engaging in the cookstove sector in **complementary** aspects, 2) together **strengthening local cooking alliances** and 3) common **strengthening of cookstove enterprises**, EnDev focusing on smaller biomass enterprises and GACC on slightly larger ones. From the perspective of the GACC representative interviewed the differences can be summarised as follows:

- a. Endev focuses on smaller / artisanal ICS enterprises; GACC takes enterprises where they are and identifies those with up-scaling potential to achieve larger production quantities. So according to GACC staff, EnDev is a bit earlier in “enterprise growth trajectory”, GACC a bit later;
- b. Endev is mainly biomass-focused, GACC considers all fuels (biomass, LPG, ethanol etc.);
- c. Endev primarily targets on livelihood creation; GACC in addition focuses on health, climate, environment and women’s empowerment.

With regard to aspect a), **smaller decentralised manufacturers** are nevertheless considered (by GACC) to play an important role as well: in particular when starting a market based approach, they can easier adapt to consumer needs, consider cooking patterns, applied fuels, affordability etc. In addition, decentralised manufacturing requires less transport logistics. A (later) more **centralised manufacturing** allows for consistent quality products that achieve reduction in emissions, durability, safety, strong components, etc. Distribution, after-sales services etc. of course needs to be decentralised, to reach the consumers.

Nevertheless, GACC sees some common successes, such as:

- 1) the above mentioned engagement with **building national alliances** in each of the countries; build capacity of stakeholders to come together in a local alliance to advocate for their own needs and their own sector. Although it is often difficult to build something from nothing, it is a common activity where the “end-product” will be stronger because it is done in cooperation.
- 2) “**Standards process**”: It has been difficult because of the different opinions, but the intellectual debate strengthens the mutual understanding. Some of the disagreements allowed strengthening the final outcome on standards.

Two aspects are considered by GACC to create some tension: GACC claims that it shared its longer term strategy in specific countries with EnDev, but according to GACC EnDev did not present such strategies because it works in a way more “adhoc” by reacting on needs, problems and opportunities without a **country-specific longer term vision**. However, the latter would allow to sound where both programs can **better complement each other**. Secondly, EnDev is mainly working with smaller enterprises, leading only to a limited improvement of the cooking technology (stove and fuel), whereas **GACC targets to leapfrog technologies** to facilitate access to a really clean technology, provided people can afford it. GACC is claiming to be very keen on sharing experience and would be grateful for more openness and transparency from EnDev side in particular about the development of a **common long-term strategy**. GACC believes that EnDev has much more funds at its disposal and GACC has a broader outreach, the ability to create awareness around the topic and to mobilise the sector.

The representative of the GACC Secretariat sees an important need to mutually recognise each other for closer cooperation to eventually benefit from the strengths of both, to avoid replicating each other and thus to have more impact. The first step to get there is to get more acquainted with each other. Last but not least, both programs to some extent are supported by the **same donors**. Thus, a serious alignment of the activities would also open up the opportunity to approach the common donors in a more integrated way, to demonstrate efficiency and thus maybe access more funds. In general, EnDev is considered by the GACC representative to have an important role: since EnDev has a more general approach and addresses energy as a whole, by including ICS it can achieve more impact for clean cooking. It can even achieve more with sound partnerships and striving for complementarity.

EUEI PDF consist of four services lines but is currently in the process of being re-structured. The whole program is based on a pool of funds including EU-ACP funds. The latter contribute to EnDev's overall budget (e.g. for activities in Ethiopia). While this contribution to EnDev is part of the "national indicative programs", the EUEI PDF as such is funded through the "thematic program" (meaning two different funding lines within the EU). So far, the cooperation between the two programs EnDev and EUEI PDF is rather limited and mainly resulted in a **few common publications**. According to the EUEI PDF representative it is however planned to explore further options for closer cooperation. From his perspective, with the EUEI PDF service line "Africa-EU Renewable Energy Cooperation Programme RECP", the following topics could be covered

- **policy advisory:** e.g. support to policy formulation, bilateral and regional exchanges
- **private sector cooperation:** e.g. EnDev can send African project developers to RECP (B2B) events; RECP can consult EnDev to compile market studies for interested financiers and investors)
- **access to finance:** advisory on business and financing models, financing instruments (e.g. "[electrifi](#)" and other low-cost capital); EnDev can channel projects to RECP following specific eligibility criteria. Maybe in the future also "impact investors" and other options, depending on the concerned market segment and its needs (ICS, SHS, mini grids etc.)
- **innovation & skills development:** (at least) information exchange on planned activities for mutual participation, but also seeking joint approaches, e.g. common support to TVET programs and initiatives, certification of PV installers
- common establishment of **professional associations** in the RE sector of a country

With regard to private sector involvement and thus also access to finance, according to the interviewee, the main problem is the fact that EnDev projects are (mostly) not commercially viable and thus not of high interest for international investors. Nevertheless - subject to the specific technology and approach - EnDev could train and create awareness among stakeholders in the countries about the existing financing instruments and how to access them. EUEI PDF could then make the missing link to the financiers. Common focus countries identified so far are Mozambique, Rwanda, Uganda and Senegal. Ideally, a **functional complementarity** between the two programs could lead to mutual benefit, meaning services of the two programs can complement each other.

All interviewees from cooperating partners confirmed that EnDev plays an **important role in the "development landscape"** and that there is strong **interest in a closer and strategically well-defined cooperation**. The interviews helped to better understand the expectations from the various partners. What remains to be analysed are EnDev's own expectations towards these organisations and initiatives. So far **no systematic in-depth analysis** of the "development landscape" and of possible added value EnDev could get from the various partners was done. Several common activities have obviously been

fruitful for both sides but they had mostly been opportunity-driven without following an overall long-term strategy (see also 5.4.1).

In addition to the above-mentioned cooperation activities, EnDev partners (GIZ, RVO, SNV) formed a consortium together with WB / ESMAP and GACC to submit a joint strategy paper to the **Green Climate Fund to get support** for a programmatic multi-country cooperation for transforming the clean cooking sector in Bangladesh, Lao, Indonesia and Uganda. The feedback received from the GCF secretariat confirmed the difficult match between climate funding channels such as the GCF and the specific challenges of decentralised energy provision that require high grant shares for technical assistance and market development, and are unable to leverage large upfront private investments [12]. EnDev would have to point out more clearly the **relevance with regard to mitigation** – expressed as “value for money” in Euro per avoided CO₂eq – and on the other hand the **contribution to adaptation**, e.g. reduced dependence on biomass energy, general diversification in usage of primary energy resources. So far, the consortium decided to change its strategy towards one of submitting a series of three individual country proposals for Senegal, Kenya and Bangladesh (also per individual accredited entity) under an adapted joint concept note defining the ratio of the cooperation and the general transformative change theory. Taking into account the lengthy process of decision making, funds in the expected range of about 40-45 million Euro could be available earliest around 2019/2020.

From the *donors' perspective*, EnDev should certainly reach out to cooperate with external parties in **financial partnerships** that make **upscaling** of energy access in specific areas possible. EnDev cooperates in a few of its programme countries with the World Bank. Such cooperation should go hand in hand with strengthening existing connections with **international networks** that were thus far seen as useful for exchanges (SE4ALL, REN21, EUEI PDF / RECP), brokering knowledge on clean cooking (GACC) and on further developing the concept of tier levels in energy access (ESMAP). Caution was expressed not to get lost in these international connections, but to **remain concrete**: provide these networks with tangible on the ground experiences that EnDev has gained during its operations.

According to the responses of *implementing partners given in the online survey*, the specific programme activities under EnDev do very much contribute to the overall objectives of Agenda 2030, as well as to the Paris Agreement (reduction of CO₂ emissions and adaptation). For the last, the assessment of the respondents is less outspoken: a considerable part sees specific programme activities under EnDev only contributing to a limited / certain extend. When is referred to the **complementarity of specific EnDev activities to programmes of other donors in EnDev countries (e.g. World Bank, USAID)**, the appreciation is very outspoken: those who answered this question (23 out of 32) state this complementarity is complete.

During *interviews with IPs* the provoking question was brought up: is EnDev really overtaken by new trends and developments? It was stated that no programme with EnDev's profile and size is currently operating, neither in the public sector, nor in the private sector. EnDev reaches **corners of energy markets where the international private sector does not come**. EnDev should refrain from competing with international development organisations, and also be careful to engage itself in global initiatives. EnDev's field experience in providing energy access can be of high importance for different parties involved in energy supply. Hence, EnDev should **serve as a reference programme for determining and communicating the experiences of successes in “access to energy” activities**. EnDev should stay in touch with international climate initiatives for its own policy orientation without engaging itself too deeply in these initiatives.

3.3. Effectiveness

The original logframe⁴ as presented in Table 3 with the outcome indicators in the second column and the achievements until mid-2017 in the third column show that the EnDev Programme has **overachieved its original major target figure of “15 million people with access to modern energy” by 3.22 million**, thus ending up with a total of 18.22 million beneficiaries. It needs to be added that progress in the various countries differs. The figures in red are those, where the results are still below the target set for end of 2018. The number of people (and thus also of women and children) who have reduced their health risk due to an improved stove is narrowly below the target. However, it is highly probable that also this target will be overachieved by the end of 2018. The figure is based on a number of parameters (stove type, ventilation, place of use etc.) which will be adapted in line with the refinement of the multi-tier cooking system in the MTF. Currently, ICS which contribute to an emission reduction of (at least) 50% are counted under this health indicator, although others also contribute to better health depending on the cooking set-up (see 3.7.4).

The original indicator specifying “that promoted technologies and services should fulfil international standards or Governing Board quality criteria for energy efficiency, safety and environment” was given up in the new version of the logframe as such **international standards or Governing Board “quality criteria”** were not clearly defined.

EnDev modified also the indicators for health and economic development. The new logframe is presented in Table 4.

⁴ These original outcome indicators have been updated in 2015 (see Table 4). To assess the achievements of the period mid-2013 until mid-2017, the original indicators are taken as reference because they have been the basis for planning.

Table 3: Logframe and achievements

Pursued Impacts (as specified in the ToR)	(1) to increase the efficiency of the use of cooking and lighting energy sources in benefiting households (2) to reduce indoor air pollution (3) to reduce health problems related to the use of traditional energy services, especially for women and young children (4) to reduce climate-damaging emissions (5) to develop and strengthen pro-poor markets for improved cook-stoves and off-grid solar products (6) to build and strengthen local gender-neutral capacities (7) to generally improve people's living conditions.			
	Indicators to be achieved by end of 2018	Achievement mid 2017 (since 2005) 13 years	EnDev I achievements (2005-2009), 5 years	EnDev II achievements (2009-2017), 8 years
Expected overall OUTCOME: Access to modern energy technologies & services of poor households, social institutions & SME's in selected developing countries has sustainably improved	New access to modern energy technologies and services for at least 15 million people (based on current budget) at 20 EUR programme cost per person (7.5 EUR for cooking, and 45 EUR for electrification).	18.22 million people have access to modern energy services: 13.77 million through ICS 4.45 million through electricity Indirectly, EnDev supported - together with others - access to sustainable energy for at least 77 million people. In addition: 19,900 social institutions (electricity or ICS) 40,200 SME modern energy for PU	5 million 4.22 million ICS 0.77 million electricity In addition: 7,454 social institutions 11,951 SME	13.22 million 9.58 million ICS 3.63 million electricity In addition: 12,446 social institutions 28,249 SME
	Health threatening emissions of cooking practices in the kitchens of 7 million people , including 5 million women and children, have been reduced by at least 50%.	6.7 million women, children and men with drastically reduced exposure to indoor air pollution (≠ 13.77 million benefitting from ICS, because only ≥ tier 2 is counted) Under assumption that 3/5 are women and children → 4 million women & children reduced their health risk.		

	Promoted technologies and services fulfil international standards or Governing Board quality criteria for energy efficiency, safety and environment.	ICS quality standard: EnDev only accepted ICS that are 40% more energy efficient than the baseline stove. EnDev developed a more complex system of quality standards in line with the MTF. However, the MTF for cooking is not yet finalized. picoPV and SHS: follow the quality criteria of Lighting Global.		
	Enterprises increase their turn-over through EnDev promoted energy technologies (excluding EnDev-financed turn-over) annually by 10%.	The turn-over of solar and stove enterprises were analysed between 2009 and 2015. Their average annual growth was 19%.		
	Compared to the baseline situation (technology specific, e.g. lumen hours per fossil generated Watt, climate harmful emission for food preparation through life-cycle-analysis etc.), the promoted technologies (based on user value) are 50% more climate friendly.	The CO ₂ emissions per lumen hour are 3000 times higher with kerosene lamps compared to solar lamps . For improved cookers , the reduction in emissions is at least 50% compared to baseline stoves.	<i>AND: 57.5 MW installed RE power 40,000 trained technicians, stove producers, sales agents</i>	

Table 4: New indicators (in red) - which had been fixed based on a defined budget - and their status of achievement

(New) Indicators	Targets until 2021: Per 100,000 EUR project budget and as result of the performance of the project	targets until 12/2019 (based on a total budget of around EUR 360 million) ⁵	Current results 06/2017	Progress-assessment
No. of people with access	5000	20 million	18.2 million	on track
No. of supplied social institutions	10	36,000	19,900	Progress insufficient
No. of (supplied?) SMEs	20	72,000	40,200	Progress insufficient
No. of people cooking at tier level 2 (and higher)	1500	5.25 million	4.7 million	On track
No. of created jobs (full time equivalents)	5	17,500	10,650	On track
generation capacity based on renewable energy	500 W	1.75 MW	42.5 MW	Overachieved
Reduction/prevention of annual CO ₂ emissions	400 t	1.5 million t CO ₂ eq	1.9 million t CO ₂ eq	Overachieved

Looking at **job creation**, a remarkable comment was made by one of the interviewees regarding the SHS sector: although a number of local companies had been established, thus also creating local jobs, those are more and more suffering from crowding out. International companies (e.g. Mkopa, Mobisol) have better access to finance, can offer lower prices for more flashy products and have access to networks (including EUEI PDF, today GetPro). On the other hand, one could argue that these big companies have also led to broader dissemination of SHS than the small ones could ever have done. This example illustrates that a market approach and clear focus on private sector can have a number of positive and negative impacts on employment and in a broader sense on social justice / allocation of profits (see also 5.3.1).

⁵ The access target for 2019 was increased because the originally planned 18 million were already achieved. Some other targets for 2019 are slightly lower than calculated as data are only available since the new indicators were introduced in 2015.

In general, establishing an overall logframe for a complex programme like EnDev which covers 25 countries and 8 types of different technology approaches is certainly a challenging task. It seems that currently outcomes are used more or less identic with impacts (see also 3.6). One possible option for the next planning phase would be to strictly **simplify the overall global logframe** and limit it to

- 1) **Specific expected outcomes** with respective indicators (x people have access to tier y for electricity / for cooking; x jobs are created etc.) as well as
- 2) **Impacts which can either be estimated or calculated** (x women/children improve their health situation due to reduced emissions; y tons of CO₂ are avoided).

However, definition of activities and outputs should be done at country / activity level because different technologies require quite different outputs. It should be considered whether additional “technology-logframes” can support the planning and steering of the program. E.g. product development and market development are very relevant for ICS but not for mini grids or grid connection. For mini-grids capacity building for O&M staff can be a crucial output whereas SHS would require a service network. The achievements within specific technology fields (e.g. number of people supplied by mini-grids, number of sold ICS) would then flow into the target figures for the overall outcome/s. This approach would allow taking into account the significant differences in the approaches to be applied for e.g. a mini-grid project and a market-based pico PV or ICS project.

To express the **targets per 100,000 Euro** as shown in Table 4 was criticised by several interviewees. E.g. it is difficult to understand the logic between 500 W generation capacity from Renewables and 100,000 Euro project budget. This way of presenting the logframe had been developed because of formal requirements (of one of the donors). However, it is neither considered useful for project steering (see also 3.5) nor for a logic presentation to the “outside” and should therefore be revised.

General important **strengths and weaknesses** of the EnDev program as specified by the interview partners and survey participants can be summarised as follows.

Table 5: Strengths and weaknesses of the EnDev Programme as expressed by interviewees and in the online survey

Strengths of EnDev	Weaknesses of EnDev
<ul style="list-style-type: none"> Different donors bundle their conceptional, political and financial resources and competences for a common target, namely access to modern energy (SDG7), which leads to more international visibility and more impact (contribution to Paris Declaration and other efforts for donor harmonisation) Focus on implementation and results Aggregated reporting on outcomes strengthens credibility and international influence; robust monitoring with conservative approach; helpful for political communication EnDev creates opportunities for market development and supports local private sector <u>while still</u> also targeting poorer, 	<ul style="list-style-type: none"> Programme steering needs more harmonisation between different donors, while also (donors’) national policies and policy changes need must be integrated (e.g. focus on refugees & migration); decide whether new focus is first “tested” or immediately integrated into overall approach More complex management structure and coordination Earmarking: if that becomes too dominant, would weaken the brand / core of EnDev Lack of a more holistic view: link between SHS, mini grids, national grid Strategic dialogue at national level (with governments) differs from country to country and needs to be further strengthened;

<p>vulnerable people in rural and remote areas through temporary subsidisation</p> <ul style="list-style-type: none"> • Possibility to test new strategies / approaches (at a smaller scale); also useful for bilateral activities • High flexibility⁶ in many ways and pragmatism in EnDev's implementation structure (EnDev is opportunistic, meaning "it goes where it can achieve most", not only a strength!); "not too big and not too small"; can be innovative • Engaging capable implementing partners is a strong feature • Building up of local capacities taking the situation of each programme country carefully into account • EnDev has continuously developed using also the lessons, results and structures built up during (former) bilateral projects which facilitated a robust basis with regard to project approaches and logistics in the countries (Indonesia, Malawi etc.). Today a strong local presence allows to systematically learn from past experiences at national level. • EnDev has more "institutional memory" than many bilateral programs; applies lessons learned more systematically • EnDev as a global programme facilitates cross-country learning (assessment of IPs: 36% "very much" and 36% "to a certain extent") • Partners in the countries (national administrations, ministries etc.) are mostly on board; it seems EnDev is not felt like being imposed (addresses needs); where EnDev explicitly addressed energy policy it achieved a lot (Rwanda) 	<ul style="list-style-type: none"> • Perceived dominance of countries which are managing EnDev (Germany and Netherlands); sometimes lack of fair competition • Even more local management capacity in countries needs to be built up • Achievement of RBF objectives is lagging behind; take-off took longer than expected, high complexity of the modality is challenging and the quality of implementing teams is variable • Discrepancy between invested resources & achievements on the one hand and external visibility on the other hand (also in international debate), "nobody knows how many mini grids EnDev already supported" • Less national visibility of donor countries in country of implementation • Current size of the programme is also reducing its flexibility; e.g. funding constraints now more difficult to handle • Knowledge management could be (even more) improved
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⁶ E.g. if responsibility for inspection of mini grids is no longer with national ministry, EnDev is flexible enough to temporarily jump in and later cooperate with local governments who are assigned responsibility.

The **interviewees and survey participants** with their very different backgrounds suggested a number of additional measures. Although they are a mix of strategic aspects, concrete suggestions for additional activities or improvement of current activities of individuals, they are listed here to provide an insight on the issues which were raised:

- Working more on **sustainable fuel, needs to be sold “as a package” together with ICS** to get more positive impact on climate; contribution to link Agenda 2030 (also gender & health) and climate agenda (emission reduction, adaptation and resilience)!
- EnDev (esp. for electrification) is less effective in some cases, if its activities are not coordinated with other energy programs working on the policy level → the success of electrification (mini-grid, grid connection) activities depends to a large extent on the regulatory framework; often more favourable conditions are needed based on professional **policy advice** (grid extension plan, licencing, tariff setting etc.)
- (Even) **stronger involvement of local institutions** to create more ownership for certain ideas and approaches; others could take up EnDev ideas and “sell them” (e.g. TERI in India); to make more use of government budgets and other international funds; more use of local expert networks
- EnDev should do **(even) more on knowledge management**: e.g. since close-down of HERA not so much new in-depth knowledge products (difficult to get the global picture); Energypedia very much used (“makes our lives easier”) but more well-structured information needed (“because we are all running after our projects”) to learn from existing experience and optimise project approaches and activities.
- EnDev should in addition find a good balance between **lower and higher tiers** (for ICS and electricity) to be taken more serious by government institutions and to catch up with and benefit from other big projects
- **RBF** Projects besides the financing and the operational funds also need budget for **technical assistance**
- **Mini grids in rural areas often need subsidy component** (either from government, other donor or EnDev) for hardware, capacity building and policy advice; a pure RBF mechanism is not sufficient.

In the *online survey*, the Implementing Partners give a positive appreciation on EnDev’s achievement of objectives and outcome for which the investments were justified. Most of the project activities are seen as relevant. *IPs during the interviews* stressed that EnDev’s effectiveness have been attributed by supportive, flexible programme management, and performance-based donor incentives. But also, country specific factors have played their role: i.e. high fuel wood prices, leeway for private sector energy initiatives, partnerships with governmental extension networks.

In a nutshell, in quantitative terms and considering the targets of the original and modified logframe, EnDev **reached its overall goal**, but the effects of energy access on education, health conditions, income levels, and people’s participation should be better articulated.

With regard to the question whether EnDev so far rather harvested the low hanging fruits or more prioritised less cost efficient pioneering work, most stakeholders stressed that EnDev so far did both and should continue to do so. However, the quantitative feedback from the survey among IPs showed that in particular those who found that EnDev is currently mainly harvesting low hanging fruits voted for shifting the focus more towards doing both.

3.4. Efficiency

According to the OECD/DAC criteria, “efficiency” is a measure of how economically resources / inputs (funds, expertise, time etc.) are converted to results / outputs. Efficiency refers to whether the relationship between input of resources and results achieved is appropriate and justifiable (**cost-efficient**). Another implication is the **timely achievement** of the programme objectives. Furthermore, it is important whether programme implementation is the **most efficient, compared to alternatives**.⁷

EnDev’s overall objective is to “facilitate access to modern energy” whereby both the result (“access to modern energy”) as well as the way HOW this is achieved vary widely. In some cases, the program is developing markets (e.g. for ICS, pico PV systems, SHS) by training stove producers, doing consumer awareness campaigns, improving transport logistics, implementing or introducing quality control etc. In other cases, EnDev contributes to hardware investment cost (e.g. viability gap financing for mini hydro in Rwanda, 70% subsidisation of PV-diesel mini grids in Senegal). Consequently, the **overall cost of an intervention depends on numerous parameters**: which activities are required to produce the result, which technology or tier level is aimed at, which other (government) programs already exist (e.g. subsidisation of mini grids in Indonesia, subsidisation of grid extension for “rural electrification entities” in Nepal), what is the educational background of training participants etc.. Some of these **parameters are not under EnDev’s control, others are**. Table 6 lists the three main aspects where EnDev can influence its efficiency (left column) and the measures which are successfully taken to address the respective efficiency parameters (right column).

Concluding from this table, a number of factors prove that EnDev keeps all costs as low as possible while achieving a maximum output⁸. With regard to these “**controllable parameters**”, EnDev is assessed to be **very efficient**.

Table 6: “controllable efficiency parameters” and EnDev’s measures to address these parameters

Controllable efficiency parameters	EnDev’s approach to ensure high efficiency
select intervention areas which allow for “optimum results at limited costs”	<ul style="list-style-type: none"> • EnDev selects a certain mixture of project interventions in the cooking and electricity sector, a mixture of different levels of supply (tiers) subject to the specific target groups and to the general frame conditions which are assessed in advance • Higher cost and/or temporary subsidisation are (only) accepted if they are needed to ensure the “leave no-one behind strategy” (e.g. remote areas, refugee camps), to address market deficiencies etc.

⁷ <http://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>: DAC Criteria for Evaluating Development Assistance

⁸ In the current subchapter, “output” is NOT used in the sense of a “logframe-output” but rather in the general sense of the expression.

optimise the intervention approach	<ul style="list-style-type: none"> • Project proposals are selected based on a performance based approach which also ensures that EnDev only covers activities / cost which cannot be covered by other stakeholders • the well-developed monitoring system (including adjustment figures to reflect reality) provide proof of the achieved outcomes (to ensure expenditures are justified) • EnDev works to a large extent with local implementing partners, mostly national and international NGOs with local staff (partly supervised by a GIZ country responsible) • EnDev very flexibly allocates funds per technology and per country program
keep its own management cost as low as possible	<ul style="list-style-type: none"> • EnDev has a very lean management at HQ: the overall percentage used for management and backstopping is in the range of 7-8% of the overall budget; at yearly expenditures of 30 million Euro/year this corresponds to about 2.4 million Euro. From the latter about 1.5 million Euro/year are staff cost, out of which about 10% (meaning 150,000 Euro/year are used for M&E). In general, overhead cost like travel expenditures are kept very low (e.g. economy tickets, middle class hotels).

In particular, the monitoring system of EnDev allows for effective **control and steering of the program towards a high efficiency**. However, for a detailed assessment of efficiency, at least the different country interventions would have to be analysed separately to then compare e.g. different activities on ICS or different activities for mini grids, also with other (bilateral) projects with regard to their input / output ratio. GIZ as organisation does **not have comparable figures at hand**. Meaning that other projects obviously do not calculate such cost per person as EnDev does. The fact that this kind of comparison is not made so far, may be an indication that comparability is almost never prevailing because project activities and consequently “expense items” vary widely.

The following three examples reflect the **broad variety** of required EnDev interventions, related costs as well as controllable / uncontrollable (efficiency) parameters:

Example of Indonesia: Roughly estimated, e.g. a mini grid based on a mini-hydro system of 20 kW costs about 60,000 Euro and can supply about 800 people, corresponding to about 75 Euro/person. All hardware cost, meaning the total of 60,000 Euro is covered by the Indonesian Government (plus contribution from the community). The budget which is spent by EnDev Indonesia is used for capacity building and strengthening, establishing a quality assurance system etc. Meaning there is no direct link between the hardware system cost and the EnDev budget, apart from the fact that more implemented systems need more trained staff and more effort and resources for quality control and monitoring. To put it another way, if the government program to subsidise mini grids did NOT exist, EnDev could not act as a facilitator at relatively low intervention cost either. The “contribution factor” in the monitoring system accommodates the fact that EnDev only partly contributes to the result of “x people have access to electricity (from mini grids)”. Thus, it influences the overall outcome figure and in this way is indirectly reflected in the efficiency.

Example of Malawi: here improved cookstoves are sold to households at a price of 2 USD, of which 1 USD goes to the producer (that corresponds to the production cost plus margin) and 1 USD is paid as

subsidy by EnDev to “bring the ICS” to a broader market. The EnDev budget is used to establish transport and warehouse logistics, to create awareness, to train entrepreneurs etc. Again more activities are needed to address a broader market which is the indirect link between EnDev budget and number of sold stoves; however the required budget for EnDev activities includes much more (is more expensive) than just the direct subsidy per cookstove.

A third example is RBF for SHS: to establish an RBF in a country like Tanzania e.g. analysis of the market and of the financing sector, negotiations with banks, training of people etc. are required. This can cost already several 10,000 Euro before the first SHS is sold (at whatsoever price). Since RBF plays an important role in EnDev’s overall portfolio, the following paragraph explains this particular instrument and the reasons for related “overhead cost” more in detail.

Essential in the **RBF modality** is that funding of companies in the low-carbon, off-grid energy sector in developing countries takes place based on **results set in advance**. The results stem from the companies’ delivering modern energy technologies or services and customers operating them. RBF aims at supporting companies along the whole value chain by reducing financial barriers [10], p.5). The companies have to show **verifiable results before they get payments**; for this payment, a financial institution administering disbursements verification needs to be engaged, as also an independent verification agent, responsible for the verification of financial claims. Such setup requires clear insight in market opportunities in the low-carbon, off-grid energy sector, i.e. actual consumers’ demand and/or consumers’ demand to be developed. Only with favourable perspectives, the companies can take the **risk to pre-finance** upfront payments they have to do to set sales in motion, but this requires developing a retail network on beforehand. Also, this costs the companies money. Depending on how developed in the low-carbon, off-grid energy sector markets are and what companies can realistically bear as financial risks, RBF can be successful or not. This explains why in 14 RBF projects the **start-up took time and implied additional costs**: interested companies had to be engaged, (financial) institutions had to be brought together, and technical assistance inputs for this had to be mobilised, which implied additional costs on top of what companies should make for their pre-financing. To summarise, RBF is quite complex, can be costly and time consuming and thus CAN reduce “efficiency” of the respective intervention. Like many other tools, it can be appropriate under certain circumstances but is not the “universal remedy” for any situation. Based on the comments received on RBF, it seems advisable to **deploy it (more) deliberately**. Whether and - if so - to which extent RBF increases the efficiency of EnDev cannot yet be assessed at the current stage. Given the fact that it provokes high up-front cost to establish the whole system, the overall cost (per person with access to modern energy) can only be evaluated after a few years of operation experience, meaning once it is clear how well the instrument performs and which results it produces.

The three results above show the complexity and variety of “invested resources for achieved results”.

The following paragraphs summarise feedbacks from the interviewees on the efficiency of the EnDev Program.

The *donors* of the EnDev partnership emphasise that **engaging Implementing Partners (IPs)** with experienced teams on the ground contributed much to the efficiency of the programme. The selected IPs are strong, because of their **close relation with local realities and superseding national policies**. But, they are also considered instrumental as intermediate between national governments and donor agencies (to limit corruption).

Most *IPs during the interviews* claimed they were efficiently reaching the programme’s targets; their overall cost levels could meet the €20 pp benchmark. At the same time, all agree that the € 20 pp

benchmark cannot be applied in the same way in **all EnDev programme countries with hugely differing characteristics**. The remoteness of the target area, the technology and institutional aspects (i.e. responsiveness of companies to consumers' demands, employment effects) are to be taken into account. E.g. for the biogas activities in Indonesia, staying within the € 20 pp benchmark would be impossible, due to high management costs⁹ (guidance, M&E), caused by hugely dispersed programme activities.

From the point of view of the *EnDev management* the benchmark (average of 20 Euro/person) is an encouragement for projects to **aim for costs efficiency, and lean approaches**, but is not excluding projects that are above the benchmark with proper justification. The management uses the benchmark to **steer on the portfolio level** as available funds need to be balanced with the set program targets.

To summarise, the **general efficiency** of the programme is assessed to be very high due to the various aspects presented in Table 6 and in particular due to the strong performance-based approach. However, it is difficult to assess the cost efficiency of the programme in detail because of the variety of activities (variety of resources mobilised / inputs as well as variety of goods and services produced / outputs), which does not allow comparing it with other more specific programs. Looking at the logframe and the achievements so far, the programme is definitely very **time-efficient** because it already over-achieved its overall target figure. Looking at "**climate-efficiency**", one could simply divide the rough expenditures of 30 million Euros per year by 1.9 million tons of avoided CO₂eq emission, which results in about 16 Euro per ton¹⁰. This is a rather high efficiency. The programme's efficiency should however NOT only be measured with such bold figures because EnDev has many more additional – not easy to measure – impacts, which further increase the overall efficiency of the programme.

The "**time dimension**" can also be looked at in a more general way, meaning with reference to "how long the results achieved (based on the inputs) are sustaining. Through a number of activities like capacity building and training (at different levels), awareness campaigns, developing markets, establishing improved (logistical/supply) structures, introducing quality control etc. EnDev is **directly addressing sustainability** and thus ensures a long-term and sustained impact. Thus, from a longer-term perspective the program will become even more efficient because it can be assumed that many structures and activities will remain after completion of a specific intervention and thus allow for additional impact. This is already visible in projects implemented at the beginning of EnDev.

Important measures to **improve the efficiency** further are knowledge sharing and cooperation / harmonisation¹¹:

Regarding the EnDev **internal exchange of knowledge and experience**, opinion among field staff differ. Some EnDev staff has the impression that an optimum is already achieved whereas others see still room for improvement to avoid reinventing the wheel (see also 5.5). It seems that exchange among GIZ staff is more intense and frequent while staff of implementing partners is not necessarily

⁹ The handling of the **carbon funding** alone caused a doubling of the project monitoring costs!

¹⁰ With a CDM price of 0,... Euro/t, EnDev cannot compete but with EU ETS in the order of magnitude of 7 Euro/t EnDev compared to other development projects could maybe competitive (in some fields?); to be analysed.

¹¹ Also cost reduction influences efficiency positively, especially when this is done in cooperation with different partners.

involved at the same level of intensity. It would be important to **building up even more local capacities** (NGO's, governmental organisations, associations etc.) and to further increasing efforts for sharing of EnDev's global experience to **ensure that this knowledge remains in the specific country** even after project end.

To increase the efficiency of its interventions, EnDev makes a big effort to **harmonise with other energy projects in a country or region** (of other bi- and multilateral donors). In addition, in regular regional and global meetings as well as expert conferences, the so-called "regional sector network", experts from different GIZ projects are exchanging their experience. EnDev is a very strong player in this network.

There is general agreement that **exchange with other external (international) stakeholders needs improvement**. On country level, cooperation and exchange takes place, mostly subject to the priorities set by the project leader. On global level, the exchange and cooperation so far was mainly opportunity driven and not planned in a strategic way (see also 3.2.4 and 5.4.1). Improvement is also needed with regard to the **communication with the donor agencies** supporting EnDev. At several occasions it was stressed that donors need more specific types of information, subject to their respective addressees. A more intense communication of EnDev management at this level bears the potential for the program to become more visible (also in other fora).

The aforementioned aspects are options, which can help to further improving efficiency in addition to other (project-internal) possibilities to make optimal use of resources while trying to maximise outputs.

3.5. Scalability based on today's "benchmarks"

As mentioned in the preceding subchapter, two types of parameters exist which influence the "cost to facilitate access to modern energy": **controllable as well as uncontrollable parameters**¹². When looking globally at what EnDev can achieve with regard to SDG 7, both types of parameters have a significant impact on the relationship "input of resources and results". This kind of analysis is even more important if "benchmarks for specific technologies / tiers" are discussed, meaning if it is expected that an increase of the benchmark is expected to allow for the achievement of higher tiers of supply. The three examples as described in the preceding subchapter (mini grids in Indonesia, ICS in Malawi, RBF in Tanzania) illustrate the complexity of comparative benchmarks, because every calculated cost per person has a variety of implications.

The three examples above illustrate that the overall **budget spent by EnDev mainly depends on the types of activities** (technical assistance, training, awareness campaigns, establish an RBF structure etc.). A direct link between the program expenditures and the **real "hardware cost" for a specific technology** only exists where such hardware is (temporarily) subsidised. The specification of a **"technology-specific benchmark"** is on the one hand considered to be very important but on the other hand might be misleading. The figures as presented in EnDev reports and as summarised in column 3 in Table 7 may give rise to the impression that access to improved cooking can be provided at 7.5 Euro per person and access to biogas at 40 Euro per person. However, in reality the EnDev benchmark cost stands for how much it costs for EnDev to **"facilitate sustainable access to energy"**

¹² Meaning controllable / uncontrollable by EnDev.

due to the different kinds of program activities. This “facilitation cost” depends on many factors: government or other donor subsidy to a specific technology, technology cost (availability of hardware, equipment etc.) and know-how in the country, required training and awareness creation to establish a market etc.

The table should NOT indicate which technologies are cheaper or more expensive under EnDev! It is meant to dissuade decision makers from the idea that e.g. “a benchmark of 50 Euro per person allows to achieve tier 3” or “a benchmark of 100 Euro allows for tier 5”. What is required for energy supply, be it improved cooking or electricity is much more complex. The very rough figures for investment costs are mainly listed to show the **order of magnitude of the “real price”**¹³, just to implement the hardware. Currently, in several cases, EnDev (temporarily) subsidises this investment cost which is - in these cases - reflected in the fact that e.g. more cookstoves require more EnDev funds (Malawi) or more people supplied by electricity from mini-grids requires more EnDev funds (Senegal).

Table 7: Cost per person for different technologies: investment cost and “EnDev cost to facilitate access”

Technology option	Investment cost (for hardware) ¹⁴ Assumption of 5 pers/device or connection	“EnDev cost to facilitate access”
Improved cookstove (depending on technology level)	< 1 to 14 Euro/pers	on average 7.5 Euro/pers for improved cooking
Biogas system	40 Euro/pers in Asia and close to 200 Euro/pers in Rwanda	
Pico PV appliance	7-15 Euro for a relatively cheap device (higher quality more expensive) (1.5-3 per pers.?)	on average 45 Euro/pers for “electricity” (averaging picoPV, SHS, mini grid, grid connection)
SHS e.g. 50 W system	5-11 Euro/W 250-550 Euro → 50-110 Euro/pers	
Mini grid	50-100 Euro/pers for MHP (in Asia) 100-250 Euro/pers for PV	
Grid connection	50-400 Euro/connection 10-80 Euro/pers depending on country (if grid nearby!)	
Overall average		20 Euro/person

¹³ Including all cost (+ profit) for equipment and installation

¹⁴ Figures from [14] and own estimates; these figures do NOT include marketing, quality assurance, R&D or management cost. They rather provide a rough estimate of pure investment cost of the technology (equipment and installation)

The table is meant to illustrate the difference between the **“technology cost”** and the required budget to support local initiatives and activities with targeted complementary interventions to **facilitate access** to modern energy. EnDev has the ambition to use the funds of its donors as efficient as possible by e.g. supporting organisations with strong own contributions either in kind or in cash. In some cases, consumers pay the “full investment cost”, in some cases (different) sources for subsidization are made use of. BUT, in particular for mini grids and grid connection, such additional sources are vital for any EnDev intervention. **Any increase (or scaling-up) of the outcome figures in particular those for electricity supply and/or higher tiers, but also a stronger focus on the poorest of the poor, more remote households etc. needs a serious discussion on EnDev’s (current) benchmark/s.** E.g. with regard to electricity supply, it cannot be taken for granted that in any country sufficient complementary (hardware) funding or subsidization is available to finance mini grids. If all real costs are taken into account (design, equipment, installation, training of O&M staff etc.), mini grids are hardly cost covering, let alone profitable. They certainly provide significant added value and offer opportunities for productive use and economic development, but the latter mostly require additional assistance to make it happen.

The **benchmark of 20 Euro per person** can be misleading in a sense that donors start calculating on “how much funds are required to supply 3 billion people with improved cooking stoves and 1 billion people with electricity”. The current logframe incites donor agencies to follow this “linear logic” by specifying what can be achieved with 100,000 Euro. Apart from what was explained above, moreover, such calculation would be based on the assumption that all supply has to be provided from the outside and (almost) no internal country development is happening. However, if a local energy industry is developing and the overall economic situation is improving because already a critical mass of the population has access to modern energy, then - ideally - a development process continues without such massive external support. The precondition is that the course is set for a **self-contained development through capacity building, know-how transfer, policy advice and further activities targeting sustainability.**

From a **user perspective**, what counts even more than the investment cost - which is often subsidised by development projects - are the **operational costs** (or in case of short lifetimes the **replacement cost**). If the user needs to buy a new battery for a SHS after 2 or 4 years at a cost of e.g. 70-150 Euro this is a significant investment to be considered. In that context, access to sustainable energy “at 20 Euro” does not give the full picture, in particular not from the consumer’s point of view. Here, the above mentioned “dimension of time”, meaning the sustainability of the results comes again into play. “Efficiency” as cost-benefit-ratio needs to take the **sustainability or continuance of the benefit** into account. EnDev accommodates this aspect e.g. by introducing quality standards and quality control, by training people for maintenance and repair. A reasonable “cost per service” or cost per kWh over the lifetime of the system has a significant impact on the sustainability of “access to energy” and thus the program’s overall targeted result.

3.6. Impact

As elaborated in 3.3, outcome and impacts are widely not differentiated in the logframe of EnDev. Impacts as specified in the ToR for the current study together with a respective comment on its achievement are listed in Table 8.

Table 8: Achievements of impacts

Impact	Comments on achievement
- To increase the efficiency of the use of cooking and lighting energy sources in benefiting households	Reflected in the number of people who have got access to “modern energy”: 13.77 million people are served by an improved and thus more efficient cookstove and 4.45 million people supplied by energy services based on RE and energy-efficient appliances (e.g. energy-efficient bulbs and LED)
- To reduce indoor air pollution	Reflected in number of people using ICS which significantly reduce indoor air pollution (also through improved cooking set-ups like ventilation etc.)
- To reduce health problems related to the use of traditional energy services, especially for women and young children	Not directly measured but obvious through reduced indoor-air pollution for 6.7 million women and children due to usage of ICS
- To reduce climate-damaging emissions	Per year 1.9 million tons of CO ₂ eq are mitigated Wood and charcoal stoves supported by EnDev save up to 1.7 million tons of firewood each year contributing to reduction of forest degradation
- To develop and strengthen pro-poor markets for improved cook-stoves and off-grid solar products	40,000 trained technicians, stove producers, sales agents sell affordable (or temporarily subsidised ¹⁵) ICS and off-grid solar products and provide after-sales services
- To build and strengthen local gender-neutral capacities	Selective studies in Ethiopia and Kenya show that EnDev seriously addresses the topic although more could be done
- To generally improve people’s living conditions.	Numerous case studies provide proof of improved living conditions in addition to the occasionally implemented impact studies E.g. > 13,400 supported schools gained access to modern energy services (better learning)

Normally, in a logframe a clear differentiation between outcome and impact is made. E.g.:

- Outcome: “x people have access to an ICS” → impact: “y people improved their health situation”
- Outcome: “skills development for x people” → impact: “y% more income generated, z self-employment opportunities”.

¹⁵ Subsidy as an instrument is always used on a temporary basis with a specific purpose (market introduction, investment costs for setting up distribution, etc.). In general, EnDev applies a market development concept in which subsidy elements are applied very thoughtfully.

“Outcomes” are the likely achieved short-term and medium term effects whereas “impacts” are positive and negative, primary and secondary, long-term effects produced by the development intervention, directly or indirectly, intended or unintended.

In the case of EnDev, a differentiation between outcome and impact is sometimes difficult, especially if the impact should be measured by impact studies and not only by calculations based on certain assumptions. Having access to electricity on household level, in enterprises, in schools and health centres has impacts on many aspects of the life of poor households. The same is true for having access to modern cooking. It is impossible to analyse all these impacts and to do it for all EnDev countries. Therefore, it had been decided after the last evaluation in 2014 to limit independent impact assessments and to rather focus more on strengthening the validation of reported numbers and reduction factors. That has been done successfully so that the validation process is now on a similar level as the monitoring and counting system. In addition, the EnDev management is analysing regularly and systematically the scientific literature on cause-effect-related impacts of access to electricity and modern cooking technologies (i.e. analysing alternative development pathways leading to specific impacts per pathway)¹⁶. The planned cooperation with larger academic institutions for detailed in-depths impact assessments did not materialise, partly due to lack of funds.

Still, as proposed in chapter 3.3, it might be helpful to **distinguish more clearly between outcomes and impacts**. Key data which is currently directly collected / counted in the context by the monitoring system (e.g. people with ICS, people with access to electricity, number of jobs created) can be considered as outcomes. Figures which are estimated or calculated based on the outcome figures, could be considered as impacts (women/children with less exposure to exhaust gases, avoided CO₂ emissions etc.)

On a policy level, the EnDev programme was able to inspire transformational changes in the partner countries in terms of structural changes, e.g. “the establishment of a professional organisation has led to a more efficient cooperation in the sector” (see the example from Peru below).

In the *online survey with IPs*, 85% of the respondents stated that the pro-poor country activities had very important or important **national impacts, such as:**

- Development of national ICS standards,
- Development of a national biomass strategy involving national education, health and forestry institutions;
- Scaling up biogas programs achieving national coverage;
- Creation of visibility of RBF modality at national level;

¹⁶ The idea of **development pathways** ‘helps developing and emerging economies to identify innovative policy solutions to their specific development challenges. Higher levels of well-being and more equitable and sustainable growth cannot be achieved by merely reproducing the experience of industrialized countries. For each of the countries studied, the series proposes options for action in specific policy areas and at the broader strategic level. It identifies the binding constraints to development across all sectors and proposes whole-of-government solutions.’ See: https://www.oecd-ilibrary.org/development/oecd-development-pathways_23087358

- Higher awareness for quality products;
- Adoption of the biogas program by the government;
- Adjustment of the local subsidy policy through partly taking over elements from micro hydro debt fund activities of EnDev;
- Integration of cooking energy as focal area for national energy planning;
- Development of skills for income generation and self-employment opportunities; motivation of non-traditional - new players joining in the clean cooking space;
- Stimulation of the entry of new investors for financing ICS including banks.

For example, in Indonesia, programme implementation had impacts on the development of national quality standards, and at provincial level on the improvement of the reputation of renewable energy. The IP in Peru added that through their efforts to also **bundle activities in the country** (e.g. establish/strengthen steering committees, professional organisations) the whole sector works more efficiently together.

Involvement of women is an integral part of EnDev and NOT just a tick-box. Since the majority of interventions target the cookstove sector, there is no doubt that women benefit from the programme to a large extent. Thus, EnDev definitely provides a significant contribution to gender balance in particular at beneficiaries' level. Electricity and ICS improve living and working conditions at home; ICS are faster and cleaner, and save up to 40 % of the time usually spent on firewood collection. Women benefitting from job creation, was shown in Kenya, where they account for almost half of all modern stove builders, installers and marketers. In general, ICS and modern lighting systems reduce emissions compared to traditional stoves and kerosene lamps / candles. EnDev promotes ICS emitting on average 30 - 40 % less carbon monoxide and other pollutants (nitrogen oxides, benzene or formaldehyde) than baseline stoves traditionally used. 45% of ICS disseminated are categorised as tier 2 and higher, based on the EnDev multi-tier system, which is similar to the MTF of the World Bank entailing a significant improvement of health protection for the users.

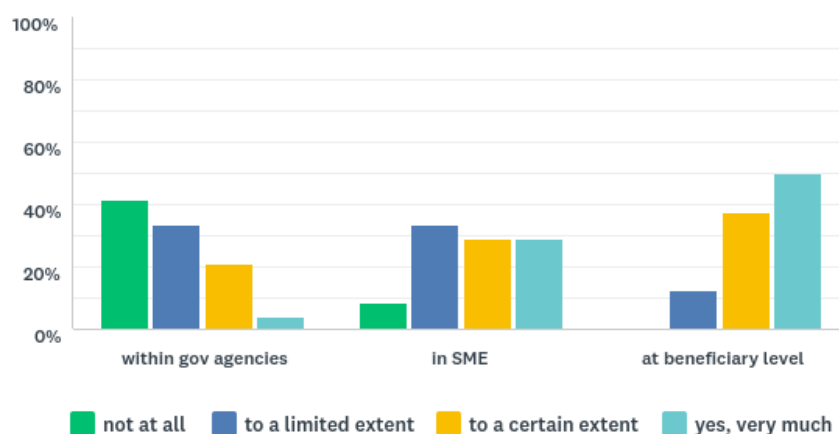


Figure 1: Survey result on extent to which project activities contribute to more gender balance (within government institutions, in SMEs and at beneficiary level)

The preceding graph (from the *online survey*) shows that the IPs see a clear **contribution to gender balance** in particular at beneficiary level, a bit less in SMEs and even less significant in government agencies. In the latter, EnDev has the least influence due to its mostly market-oriented approaches.

In Indonesia, PV mini grid pilot sites are being developed to investigate best O&M models, do training etc. Capacity building has shown that women were the best performing trainees. In Malawi, among 5,000 people in production groups, 4,000 are women. Most groups were built up by NGOs and supported women to get involved. ICS is a direct empowerment to women (less collection of firewood, health improvement etc.). Also most of the leaders of groups are women. And, even at semi-industrialised level (producing > 2000 stoves) out of 5 managers 3 are women.

3.7. Sustainability

To achieve “technical supply sustainability”, it is essential to have

1. **capacitated entrepreneurs or individuals**, who are able to
 - **sell technologies** and services in case of a market product (ICS, pico PV etc.)
 - **solve technical difficulties** and to replace spare parts or the whole system in case of a market product or an energy system like a mini grid or grid connection
2. customers, who are aware of the advantages and benefits of modern energy technologies and services and able and willing to **pay for them**
3. a conducive **policy and regulatory framework** in case of a mini grid or grid connection (e.g. to ensure a tariff system which makes energy affordable and operation and management of the system feasible. The framework is also important but normally less crucial for market products

Following this logic, **capacity building** for service providers and awareness raising at customer level (see 3.7.1) as well as creating favourable **frame conditions** through structural and policy measure (see 3.7.2) are important. Two more aspects, namely **environmental and social** sustainability are important to be looked at (see 3.7.3 and 3.7.4). An additional dimension of sustainability brought up by one interviewee was the **use of energy** - whether it is purely consumptive (e.g. for TV) or also productive (e.g. for agro processing). Sustainability in this case would refer to the type or purpose of consumption of energy which also has an impact on the profitability of investments into energy technologies and services. However, since there was no agreement among the majority of respondents on the fact that a consumptive energy use as such is “unsustainable”, this aspect is excluded here.

Most, if not all, EnDev interventions have a direct or indirect subsidy component, which is in general linked to investments or has an influence of the end consumer price. Subsidies for operational cost of energy technologies play a minor role. The question can be raised about the level and in particular the duration of subsidisation over the project term. In some contexts, access to modern energy might remain a field where **subsidisation (of investment) is continuously needed**, at least for part of the population. Where this is the underlying assumption, it is useful to express it as part of the concept (even if it reveals only in the course of the intervention). The logical consequence should then be to identify another longer-term mechanism for subsidisation, be it governmental or other.

The complex **monitoring** of EnDev among others also surveys in how far the interventions are sustainable, e.g. whether people continue to use an ICS, whether a mini grid continues to be

operated etc.¹⁷. Despite the fact that the reporting is very conservative (applying a number of “reduction factors”) still the results are very positive and show as such that **interventions are mostly sustainable**. The critical question is **for how long and at which expenses** EnDev is going to follow up on this “**sustainability control**” and whether it is useful at all to do that. So far, no criteria exist for continuing or phasing out of monitoring beyond the intervention.

In general, EnDev is paying a lot of attention to sustainability [11] . Several studies were carried out to analyse sustainability challenges. One of the general conclusions of the studies is to “**strengthen market development with a high ownership of the private sector**”, in particular for ICS, pico PV and SHS systems. The observation that **markets further develop**, is seen as an indicator for sustainability. To put it more critical: private sector and market development are seen as “proxy” for sustainability which is maybe not always correct. For mini-grids and grid-connection the setting is more complex and requires different review criteria. It was found that during the interviews and the survey, people mostly refer to market products and less to mini grids and grid connection. As a consequence, mostly “market development” was equated with sustainability. However, the subchapters still follow the logic of the three sustainability criteria as listed above.

In the *interviews with donors*, EnDev’s contribution to “transformational changes” was central in their comments on the programme’s sustainability. In this context, they were mostly referring to EnDev’s **market based approach**, i.e. **strengthening of supply chains** that make energy access better possible. E.g. in Tanzania, where an RBF approach had been applied, there is evidence that about 60% of the pico solar SME’s are catching up and can operate without external support. A consistent **focus on private sector development** relevant for energy supply was deemed needed. It was questioned how far market development goes and for how long. In the *interviews with IPs*, also growth of (e.g. off-grid solar) value chain was mentioned as important for sustainability. However, e.g. grid extension requires a sound **regulatory framework and a reliable government**. It was stressed that there is not a single answer to the question on the best sustainability guarantee, because that depends on the local context.

3.7.1. Building up and strengthening local capacities

A big part of activities of EnDev are entrepreneurial and technical capacity building and strengthening. In addition, awareness-raising on consumer side is done to ensure users appreciate the value of improved cookstoves and renewable energy technologies, have sufficient knowledge about quality and warranty aspects and are willing to pay for the services. “**How much**” **capacity building and awareness raising** is needed very much depends not only on the complexity of the technology but also on the context in the specific country (level of education, previous experience etc.). From the online survey among the IPs, it turned out that most of the respondents confirm that capacity development is fully appropriate (36%) or to a large extent appropriate (40%). Given the

¹⁷ Factors that influence upward or downward adjustment of outcome: market forces, lifespan of devices, frequency of maintenance, customer growth in mini grid after closure of project (including stabilisation of replacements)

additional votes for “more or less” or “not” appropriate of together almost 20%, shows that still additional activities are needed to reach a fully satisfying level (see Figure 2).

Additional comments given to this question include: more training required especially for resellers of stoves / also for health education and for environmental education / training entrepreneurs and gov. staff, also MFI / technical training to masons and installers in class room settings as well as peer training and exchanges / training appropriate - yet need to be: regularly repeated & refreshed and tailor made to address site-specific needs.

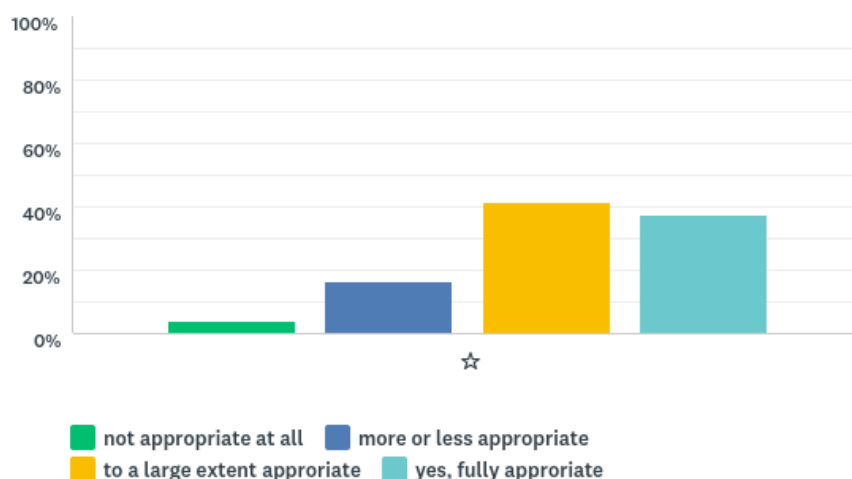


Figure 2: Feedback from Implementing Partners on whether local capacity building and strengthening are appropriate to achieve intended results.

Other comment from IPs are: Building and strengthening local capacities can take different shapes: training professionals in new skills, supporting the establishment of a national foundation promoting RE applications like biogas, or sensitizing communities on clean cooking and lighting. In many cases, the **government needs to be involved to bring those initiatives further**. A very positive comment with regard to sustainability came from the IP in Kenya: “Working with private sector and creating opportunity for income generation at various stages in the stove and solar value chain will make it possible for people to continue doing business. We see that even those we trained 8-10 years ago are still doing this work and many of them are still reporting...”

One of the comparative advantages of EnDev as a global programme is that it can resort to broad **implementation experience, tools and knowledge products**. To further improve capacity building, in some cases simply more time and resources are needed and in others access to existing knowledge products (e.g. also translations) or development of new (improved) knowledge products can be helpful.

For the general sustainability of outcomes the assessment was that outcomes are considered to be “very” (28%) or “more or less” (72%) sustainable, which is a quite positive result (see Figure 3). Still sustainability will continue to be an important issue. In the comments to this question the following remarks were made: lack of instalment payments (for ICS) / project will end before fully sustainable outcomes have been achieved, however sufficiently sustainable results achieved to-date to assume that markets will continue post-EnDev / pico PV in itself is not a very sustainable intervention on all levels (short lifetime - spare parts not available for all systems) / mini-grids are sustainable but based on one pilot only; ownership of the commune is working well but effects can only be proved on long

term / RBF unlocks the entrepreneurial spirit for many of the biogas enterprises, from small to larger ones / biogas systems in Kenya are sustainable, in Tanzania and Uganda more or less / initial quality of SHS installations not 100% to requested standards as of contract, follow up with enterprises and more financial pressure in 2nd round taken.

This variety of comments also shows the complexity of the various technologies and approaches which make a general judgement on sustainability quite difficult.

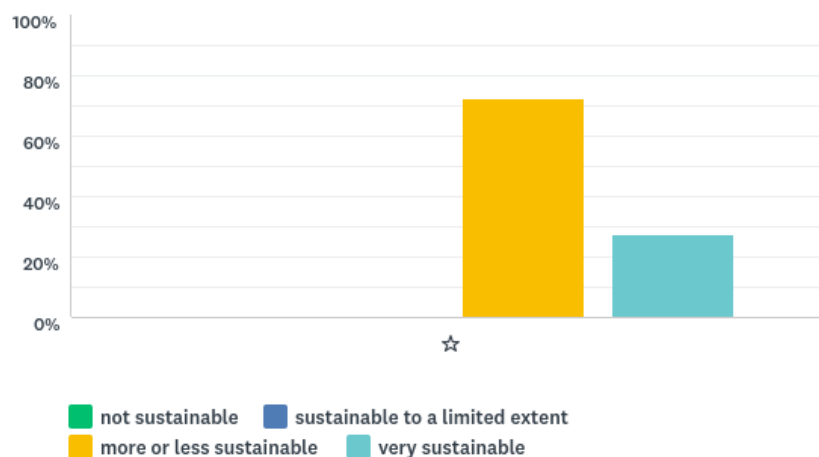


Figure 3: Feedback from Implementing Partners on extent to which they consider the outcomes (in the specific field) to be sustainable

From *EnDev management* it was added that most problems are found regarding the operation of mini-grids and the maintenance and repair of installations at social institutions.

Feedback from IPs is also referring to EnDev being based “on activities in the past” (see also Table 5): e.g. sustainability is higher where many NGOs already got training on ICS in the past (or where capacity has been built up for a specific technology (e.g. in Indonesia, sustainability of MHP systems easier to be achieved than for PV systems, MHP already part of national vocational training).

3.7.2. Alignment with / change within partner countries: contribution to “transformational changes”

“**Transformational change** is the process whereby positive development results are achieved and sustained over time by institutionalizing policies, programmes and projects within national strategies. It should be noted that this embodies the concept of institutionally sustained results – consistency of achievement over time. This is in order to exclude short-term, transitory impact. **National actors** are by far the most important factors in effecting transformational change.” [12]. This description from a UNDP study also stresses the need for a “**cluster of activities** which all push in a similar direction over a **prolonged period of time**”, but which do not have to be written up as a coherent programme ex ante.

Following these statements, EnDev activities should be embedded in a country context with **national partners and be combined with other activities of national / international actors over a longer**

period to ensure that they contribute to transformational changes and thus sustainability of the interventions.

Transformational changes include

- **policy changes**, e.g. favourable tariff regulations for RE mini grids and grid connected systems, establishment of required governmental structures in ministries, reduction of custom duties and tax exemptions for (PV) products not available in the country
- establishment of **supportive government programs** providing subsidies / co-financing
- **human resources development** and capacity building through integration in training institutions (curricula development etc.)

Apart from the government's role in changing policies and frame conditions, also civil society and the private sector play their role and finally, end consumers' behavioural changes are an essential element. Transformational changes are important for market products like ICS, pico PV appliances, SHS but **even more crucial for complex energy systems**, namely mini-grids or grid connections.

The above described UNDP experience is confirmed by the fact that transformational changes through EnDev interventions mainly happened in countries with rather long-term interventions of like-minded organizations and programs (partly even before EnDev started), e.g. Rwanda, Ethiopia and Indonesia. EnDev's contribution towards transitional and transformational changes is described in the EnDev Progress Report 2015 [13]. EnDev tries to support transitions in the energy access sector, from three stone fires to improved cooking solutions, from kerosene and dry cell batteries to solar or (mini) grid electricity, putting both access and renewable resources at the centre of the transition. **EnDev at least partly contributes to several fundamental changes in its partner countries:**

- from fossil fuel dominated economies towards economies that are based on renewable energy resources and energy efficiency;
- from centralized, grid based power systems towards a complementary system which also includes decentralized off-grid solutions for electricity services in rural areas;
- from an economic growth concept focused on urban and industry development towards rural development strategies.

EnDev contributes to these changes in its partner countries by triggering

- a. **structural changes**;
- b. building up **capacities and know-how** among key actors; and
- c. a shift in **mind-sets** and peoples' behaviour.

Table 9 shows how some of the results from EnDev projects support fundamental changes. These may lead over time to transitions and eventually possibly to transformational changes.

Through its interventions, EnDev creates and increases awareness on **energy efficiency** (ICS, LED...) and **renewables**. In many countries, **benchmarks for quality** (ICS, pico PV and SHS products according to Lighting Global Standards) have been set with the help of EnDev.

Table 9: EnDev's contribution to (structural and mind set) changes

a) triggering structural changes	EnDev country
<ul style="list-style-type: none"> Introduction and adaptation of power purchase agreements and feed-in-tariffs 	Rwanda (in cooperation with ESMAP)
<ul style="list-style-type: none"> Creation and strengthening of private sector and civil society association and organizations 	Ethiopia, Kenya, Nepal, Peru
<ul style="list-style-type: none"> Introduction of performance standards and benchmarks for products and services moving the market into new directions 	Nepal, Peru
b) triggering of new capabilities among key actors	
<ul style="list-style-type: none"> Introduction of innovative technologies 	Rwanda
<ul style="list-style-type: none"> Capacity development of private sector and private investors in new technologies 	Nepal, Peru
<ul style="list-style-type: none"> Creation and strengthening of public institutions for RE technologies (e.g. quality inspection agencies, rural energy agencies) 	Bolivia, Peru, Liberia, Senegal, Nepal, Indonesia
c) triggering a shift of mind-sets and peoples' behaviour	
<ul style="list-style-type: none"> Creation and promotion of awareness shift among customers towards innovative renewable and clean technologies, and a change of the image of devices (modern instead of poor man's business). 	Madagascar, Bolivia, Peru
<ul style="list-style-type: none"> Awareness shift among governmental and public institutions towards decentralized off-grid solutions and low carbon development 	Nepal, Peru

Several donors mentioned that they already support (other) specific programs and projects which work on **policy changes and conducive legal and regulatory frameworks** for renewables and energy access. Where this is the case in a specific EnDev country, a **close coordination of activities** should be sought. In countries where none of the current EnDev donors is active in the field of policy advice either other partners should be identified or EnDev eventually needs to invest **own efforts** in particular in cases where the framework is really the "limiting factor".

In the context of "transformational change", it is important to have the broader view on the energy sector and a potential future countrywide supply. E.g. experience has shown that **SHS and pico PV markets develop "under the grid"**. Meaning the different tiers are not complementary or "one developing after the other". **Mini grids are often abandoned when the national grid arrives** because there is no conducive legal framework which ensures that the power system is connected to the grid and continues operation. At a larger scale, such developments are not sustainable but rather a **waste of funds and resources**. This is most relevant for electricity services, whereas normally, there is much less or even no "overlap" between cooking systems and electricity services because the transition to electrical cooking is mostly not developing "immediately" once electricity (or even the grid) is available. The following graph (Figure 4) compares cost per installed PV systems per Watt to illustrate that smaller systems are normally the more expensive investment solution (mostly because of the required battery component). Even though grid extension is a significant cost factor to be included here, it is still worth to **give more thought to possibilities for integration of different systems** (i.e. grid connection of SHS and mini grids once the grid arrives). Although a general "interlinking of small

individual energy systems to larger intelligent grids” as this has been addressed in one of the interviews with donor agencies is still a distant prospect, general **considerations on sustainable (national) supply concepts** in the various countries should also be part of EnDev’s involvement.

To summarise, it is recommended that EnDev when deciding on a specific intervention in a country, takes the overall picture seriously into account, including: **availability of different types of energy resources, rough assessment of the macroeconomic impact** (overall required investments; not only opportunity cost of a household) and **possibilities of later integration** (e.g. technical and legal requirements of isolated systems to become grid connected later on).

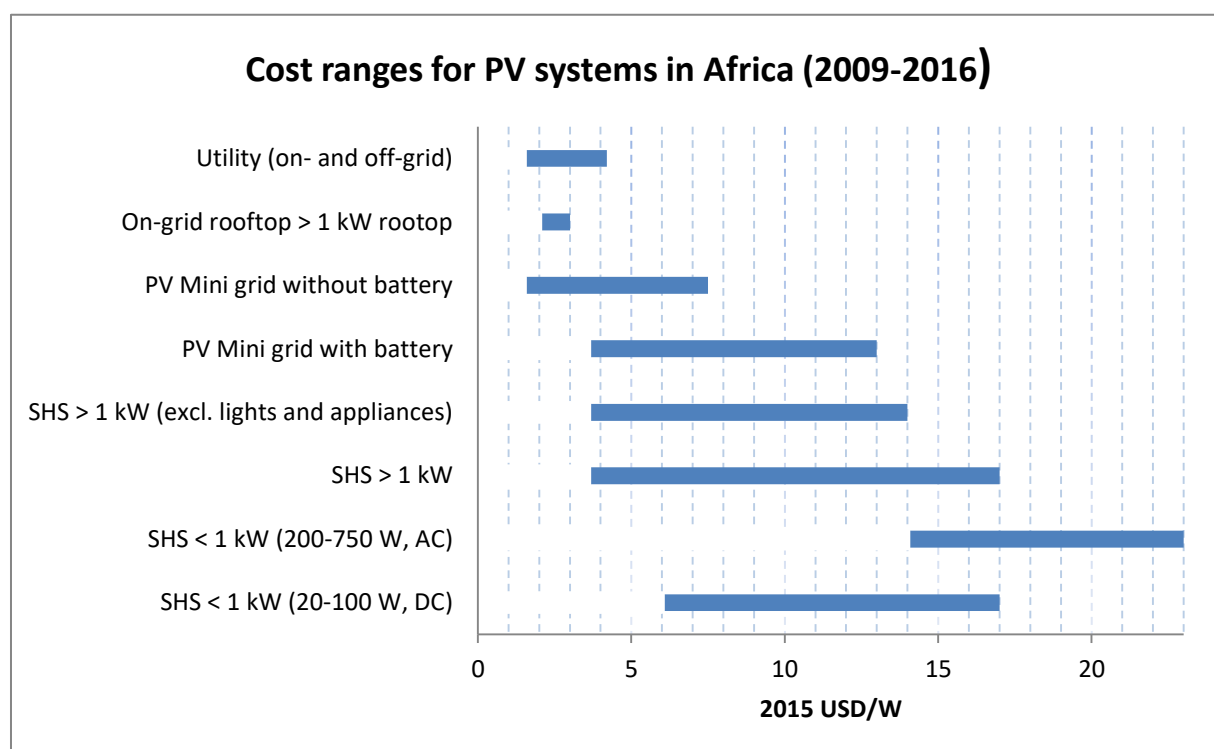


Figure 4: Cost ranges of PV systems in Africa (2009-2016) [14]

3.7.3. Recycling / disposal of electronic waste and batteries

This topic is directly related to what is elaborated on in the preceding paragraph. The massive dissemination of small and smallest energy systems with a quite limited lifespan (in particular the batteries) will sooner or later provoke a significant environmental problem of partly dangerous waste. Many interview partners highlighted this as an unsolved problem which does not fit into an approach of “sustainable and climate friendly” energy supply.

Currently, experience shows that – if at all – only the bigger players in the PV market have a look at this topic simply because of being afraid to lose their positive image. It was mentioned in an interview that e.g. in the context of a big PPP project with the company Total in Kenya their main interest was to solve the waste problem, just because of their fear of future bad reputation. Whereas for a small (local) start-up, electronic waste is not something that will one day completely destroy its image, they have no reputation (yet) and therefore not so much to lose.

Several interviewees mentioned the problem of disposal / recycling of batteries, electronic waste, PV modules etc. EnDev management is well aware of this problem and plans to address this topic

(together with two other difficult topics: “economic development through energy access” and “sustainable energy supply of social infrastructure”) by means of a so-called **innovation challenge fund**. Given the complexity of the three topics, the additional total budget of 1 to 1.5 million Euro seems to be a drop in the bucket.

EnDev should take this topic much more serious, and increase its already ongoing activities in this field, even though it will require additional resources.

3.7.4. Environmental impact of improved cookstoves

There is no doubt about the significant positive environmental impact of improved - meaning more efficient - cookstoves. Whichever fuel is used, be it wood, charcoal, manure or even LPG, if efficiency is increased by 40% (or even more) a lot is already achieved. Still it was mentioned in a few interviews that stoves should be seen **in close connection with the type of fuel**. EnDev is already developing the so-called **Cooking Energy System CES approach** which takes more of the complexity into account: fuel quality / switching fuel, improving cooking device and equipment, adjustment of user behaviour and cooking practices as well as increasing ventilation and modifying the kitchen. From a user perspective the dimensions of accessibility, health protection and convenience are those of relevance and are reflected in the CES. EnDev worked on the CES evaluation concept and developed data collection tools which are being piloted in the field (2017). While working on field studies to assess the influencing factors (to be integrated into the monitoring system), it seems that there is contemporaneous need from IPs to get additional information and support on **how to apply new findings** in their specific projects. Even though, results of the mentioned studies might be not yet final, continuous sharing and exchange of experience is certainly helpful, also to get continuous broad feedback from the various projects in the ongoing process of refinement of the new CES.

4. Strategic assessment of program governance and management

4.1. Governance and management structure

EnDev is co-managed by RVO and GIZ. In light of the planned staff change in GIZ’s leadership position 6 main themes of management have been defined and fixed in writing.

Table 10: Overview on issues of RVO/GIZ co-management¹⁸

1.	Approach and strategy <ul style="list-style-type: none"> - (Further) development of programmatic approach and narrative - (Further) strategy development and strategic priority setting - International positioning and outreach/visibility - Portfolio analysis and management (incl. prioritization of countries and thematic areas)
2.	Alliances and partners <ul style="list-style-type: none"> - Strategic partnering with international initiatives and players

¹⁸ Provided by Daniel Busche on 21 February 2018

	<ul style="list-style-type: none"> - Involving in international policy processes and discussions - International agenda-setting
3.	Donors and funding <ul style="list-style-type: none"> - Key account management of existing donors - Allocation of funds - Tapping new funding sources and donors - Identifying innovative financing mechanisms
4.	Program management <ul style="list-style-type: none"> - Evaluation of country implementation and phasing in/out - Monitoring and evaluation processes (incl. validation/verification mechanisms) - Thematic work streams - Innovation management (embedded R+D)
5.	Special issues <ul style="list-style-type: none"> - Exploring interventions tackling root causes of displacement and forced migration - Development of market development methodology - Development of programmatic rural electrification approach - Development of comprehensive clean cooking market approach
6.	Country backstopping <ul style="list-style-type: none"> - Backstopping of implementation in selected countries

Management setup

Around the listed six issues EnDev's (new) management structure is setup. With the handover of the (co-) leadership of GIZ' EnDev management **adaptations in the overall management structure** have been made within GIZ. To share the burden of management responsibility among several persons and thus to increase work efficiency an additional hierarchy level is being introduced. In addition, this will allow for more participatory decision making at management level. EnDev's overall management structure¹⁹ can now be described as an organisation with two hierarchical layers, consisting of the **Top management** and 3 departments in which each leader also has management responsibility i.e.

- **Team 1:** Finance & administration
- **Team 2:** Thematic areas and country backstopping
- **Team 3:** External outreach, donor relations and some thematic areas (with country backstopping).

The above-mentioned **handover in leadership** is a continuous transition process over almost 12 months to ensure that the successor gets the full picture of the complex programme.

All **country projects** and **multi-country projects** get backstopping from EnDev's head office. This backstopping at country level is coordinated at regional level in 4 regions **Sub Sahara Africa, South East Asia, and Latin America**. Backstopping in **New countries** is separately done; the top management is personally involved in this.

¹⁹ According to a PowerPoint slide provided by Daniel Busche on 21 February 2018

Besides the 2 hierarchical layers, the organisation has 2 staff units at **Technical level**, i.e. on Electrification technologies and on Cooking technologies and 3 separate units take care of **Components with a separate budget** line in EnDev's programme budget i.e. for RBF, Cooking Sector Development, and Refugees & Migration.

Last but not least, there are 5 staff units covering **Cross cutting issues**, i.e. **Climate, Productive Use (of Energy), Economic and market development, Gender, and Health**.

EnDev's organisation hosts in total 21 staff members, of which 16 come from GIZ and 5 from RVO. Since not all staff work full time, the total corresponds to about 16 full time positions (14 at GIZ and 2.2 at RVO).

Co-management of EnDev is mostly reflected in the top management: the programme's directorate consists of one GIZ manager and one RVO manager (both full-time). The major part of supporting services is in the hands of GIZ with its head office in Eschborn.

The **top management** takes part in the backstopping of the units: **New countries** and **Components with a separate budget line**. This is also the case in the backstopping of a few other countries; the RVO member of the Directorate carries out most of these backstopping tasks. The GIZ member of the Directorate is more concentrated on EnDev's coordination of administrative management. The entire directorate is focused on **EnDev strategy and International positioning**.

The **backstopping of country projects and multi-country projects** is mostly done by GIZ staff and for a small part by RVO staff. Backstopping staff operate for countries in different regions, in accordance to the type of projects/technologies, on which each of them is concentrated. This is the clearest for cooking technologies, RBF, Cooking sector development, but in other cases the backstopping assignments to specific staff members such logic is less apparently present.

Decisions following on backstopping are prepared by the country backstoppers and their regional coordinators and are finally enforced by the top management. As the top management is also involved in backstopping itself, decisions are mainly made after consultations and exchange of arguments, and to a lesser extent based on hierarchical positions. This requires collegial cooperation based on professional merits.

EnDev's Management structure does not hold its **own human resources management department**; this is in the hand of GIZ for those employed by GIZ and of RVO for those employed by RVO. This circumstance makes collegial consultations better possible, because these are then free from formal human resources issues (i.e. recruitment, remuneration, personnel assessments). At the other hand is EnDev's recruitment embedded in GIZ's and RVO's procedures, and are decisions made based on consultations with respect to what EnDev needs and what both institutions can offer either by internal or direct external recruitment. In case EnDev needs personnel for its (multi-)country projects, it submits to GIZ an Order for personnel deployment ("Auftrag zur Personalbereitstellung"), which entails a job description containing a short overview of the working context and the tasks to be fulfilled.²⁰

Concluding and as already mentioned in paragraph 3.4, EnDev has a **lean and well appropriate management setup**. With the recent changes in the set-up it has been well-adapted to the changed

²⁰ http://endev.energypedia.info/wiki/Job_Descriptions

organizational requirements. The changes in the management structure were effectuated in a flexible and pragmatic manner.

Management costs

EnDev's management has the ambition to limit its costs to maximum 8% of the total expenditures. This means that based on an assumed programme spending of € 30 million per year, maximum about € 2.4 million are overhead. Since some of the management costs will only be clear at a later stage due to the special financial system of GIZ, expenditures are limited to 7% with 1% reserve. The management costs of € 2.4 million include the overheads for the management (around 12%).

Around 60% of the management costs are staff costs. The latter have increased over the time and are currently roughly at € 1.5 million. The remaining funds are assigned to topics, country backstopping, public relation work, procurement etc..²¹ The actual management costs of GIZ have been on average €2 million per year over the last 5 years. That means that EnDev' management in Europe operated slightly below 7% of the total programme expenditures.²² Initially were RVO EnDev management activities financed from the overall budget under GIZ. Now the funds from DGIS also for management are going directly to RVO. Even with this additional cost the overall percentage for management does not exceed the mentioned 8%.

Governing Board

Twice a year, in spring and autumn meetings of EnDev's Governing Board take place: the autumn meeting focuses on strategic issues at hand (new international developments relevant for EnDev, important programme themes). A standard topic on the agenda is the update on EnDev's fulfilment of the Annual Plan until mid of the current year, the challenges thereof, and to the Annual Planning for the year to come. The spring meeting has a similar agenda, but attends to the state of affairs of the fulfillment of the annual plan of the past year, and provides an update of the annual planning for the ongoing year. Members of the Governing Board have the mandate to bring in their points of view, representing their country's policy lines. This especially counts when decisions are to be taken that have financial consequences for each of the members of the EnDev partnership, like e.g. the question, to what extent the members allow EnDev to operate flexibly with the funds put at its disposal, based on the country project concepts presented in the Annual Plan. In addition, EnDev is implementing certain components i.e. RBF, Cooking Sector Development, and Refugees & Migration with separate earmarked budget.

Knowledge management

A workspace the so-called "**EnDev Wiki**" is made available by Energypedia for all EnDev staff. Currently about 380 EnDev staff members are on the Wiki and thus also have **access to Energypedia**²³. The latter is a wiki platform for collaborative knowledge exchange on renewable energy, energy access, and energy efficiency topics in developing countries. E.g. in January 2018, Energypedia had more than 50,000 unique visitors all over the world. Currently it has 8,000

²¹ Email Carsten Hellpap, 22 February 2018

²² Email Carsten Hellpap, 23 February 2018

²³ Energypedia is a spin-off of GIZ founded in 2012; currently with 1.5 full-time positions.

registered users. The financial support is currently **40,000 Euro per year**. At EnDev's start, Energypedia published lots of relevant information and reports from EnDev and thus made it available to a broader public. Due to its limited resources and the fact that EnDev staff itself is mostly taken by their daily work, it is almost impossible to keep pace with analysing and processing of information and selection of relevant information to present it on the platform. Interviews with IPs showed however that the Wiki as well as Energypedia are **very well appreciated** by them. However, IPs wish to get not only specific project and country information but also e.g. comparative analyses of implementation experience as well as more information also in other languages (e.g. in French, which would be very relevant for many African countries).

4.2. Portfolio management and steering of the program

4.2.1. Rules and procedures

EnDev has defined Work Responsibilities with respect to Standard services that EnDev's head office should deliver.

The last-mentioned set of responsibilities is the most comprehensive of all, because this covers the whole EnDev organisation. It concerns 7 core areas, i.e. **Finances, Outcome monitoring, Impact monitoring, Knowledge management, Human resources, Backstopping, during planning and implementation**.²⁴ For Finances, a separate controlling tool has been put in place.²⁵ Within these 7 core areas attention to Contracts, Deadlines, EnDev-Wiki maintenance, and Handover procedures are specified.

For the assignments and tasks with the EnDev management formats for: (Up-scaling) proposal, Country sheet, Progress Report, Annual Planning, Counting Procedure – Overview of all EnDev projects, guidelines for contracts, guidelines for negotiations with governments, and handing over are applied.

EnDev organizes a series of meetings each year for internal consultations (a/o between GIZ and RVO and its core team), and for its global staff (EnDev info days). The usually biannual **EnDev info day** is a two-day in-person meeting of EnDev global staff in Eschborn. It is intended to provide:

- information to in-country EnDev staff
- feedback to EnDev headquarters staff
- opportunities for mutual exchange

Being asked to which extent the IPs in the countries are satisfied with cross-country learning, getting support for M&E as well as for backstopping, the answers show that the services and support provided by the management to the country teams is highly appreciated but that there is still room for improvements.

²⁴ http://endev.energypedia.info/wiki/Standard_services_of_EnDev_HQ_team

²⁵ http://endev.energypedia.info/wiki/Standard_services_of_EnDev_HQ_team

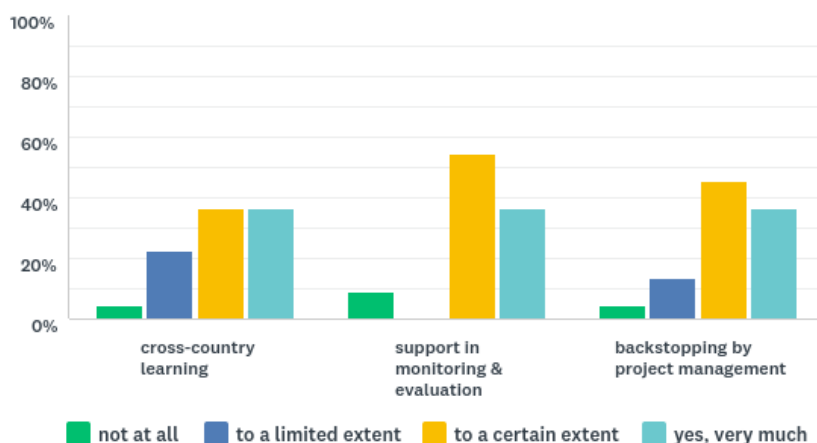


Figure 5: Satisfaction of Implementing Partners on cross-country learning, M&E support and backstopping

4.2.2. Available funds and budget management

Table 11 presents the financial commitments of the donors to the EnDev partnership per October 2017, in total about € 312 million. The overview shows that most of the committed funds are not earmarked, namely about € 206 million. From the funds which are earmarked (total of about € 106 million), € 29.5 million is earmarked for special country programmes and about € 77 million for specific technologies/modalities. This means that in total more than one third of the total commitments is earmarked.

This **earmarking limits for this 1/3 of the commitments a flexible use of the funds**. However, in the interviews with donor representatives, as with representatives of IPs, added with the results of the online survey came clearly forward that the **flexibility in programme implementation was highly appreciated**, because it made quick answers on changed circumstances possible; it gave also more freedom to go for pragmatic solutions (see Table 5, and also 7.1).

Apart from the issue of earmarking, the EnDev management tries in consultation with EnDev's GB members to harmonize its own expenditures with the expected donor disbursements for ensuring a smooth implementation of programme activities. This often proved to be very complex, as the **mentioned planning cycles and related disbursement procedures/practices were differing considerably** per EnDev donor: the different planning horizons of EnDev's donors make it difficult for EnDev to plan its expenditures more than 1.5 years in advance. To address this problem and to safeguard a smooth implementation, the programme tries to **maintain its flexibility by means of the non-earmarked donor funding**, e.g. in case for whatsoever reason some disbursements would be delayed. This is especially important with respect to **retaining EnDev's human resources, required for an uninterrupted programme implementation**. EnDev management needs to make quite an important administrative and accounting effort to ensure smooth implementation of the significant number of projects in the various countries. **Less earmarking and more long-term commitments** from donors would alleviate these problems, reduce administrative cost and allow for even more efficient programme management.

Table 11: Division of EnDev funds²⁶

			Earmarked for			
			Countries		Technologies	
Donor	Contribution	Not earmarked Euro	Country	Amount in Euro	Technology	Amount in Euros
BMZ	62.800.000	62.800.000				
BMZ climate funds	10.000.000				Climate & environ. protection by RE & EE	10.000.000
DGIS	100.629.138	96.629.138	Mozambique	4.000.000		
MFA Norway	28.733.000	26.213.000	Ethiopia	2.100.000		
			Ethiopia	420.000	School electrification	
DFID	50.976.000				RBF	50.976.000
DFID Bangladesch	3.260.000		Bangladesh	3.260.000		
DFAT	15.844.000				Improved cooking technology	15.844.000
SDC	7.700.000	7.700.000				
SIDA	12.850.000	12.850.000				
RVO	2.000.000		Ghana, Kenya, Bangla., Ugan.	2.000.000	Harmonization support clean cooking sectors	
Irish AID	3.644.943		Ethiopia	3.644.943	PV and stoves	
EU West Africa	4.360.000		Senegal, Benin, Burkina Faso	4.360.000		
EU ET	8.850.000		Ethiopia	8.850.000		
Kofih	908.000		Ethiopia	908.000	Maternal and child health services	
Total	312.555.081	206.192.138		29.542.943		76.820.000

4.2.3. Number of countries: entry and exit strategies

EnDev defined **9 entry criteria** for countries in Africa, Asia and Latin America with a minimum energy poverty ratio (no access to electricity and/or improved cooking system) of 30% on the national level, while at least half of its funds has to be committed to Least Developed Countries ([1], p.4): a) Promising opportunities for increasing energy access, b) Political interest of EnDev donors, c) Ownership of the partner country and stakeholders involved, d) Expected cost efficiency (low transaction costs per beneficiary), e) Additionality (intervention wouldn't happen otherwise - within the next five years), f) Expected sustainability (structures are in place that secure access in the long term), g) Scaling up potential (approach that has the potential to reach a high number of people), h) Evidence that people with new access are the result of the EnDev intervention, and i)

²⁶ Table provided by EnDev's Directorate, Carsten Hellpap in October 2017

Complementarity (the interventions are complementary to other projects). These criteria are also included in the strategy document **for the period 2019 – 2022** ([15], p.4).

Over the last 4 years (2014 – 2017) the EnDev partnership ran projects/activities in different countries. The table gives an overview of the number of project and the number of countries.

Table 12: Overview Number of activities and countries 2014 – 2017

Year	No of Countries	No of Projects	No of Multi Country projects
2014	24	26	0
2015	26	29	4
2016	25	29	4
2017	25	31	5

The overview shows that the number of countries that host EnDev projects was rather stable, but that the **total number of country projects has grown**. Over the period 2014 – 2017 decisions on increasing the number of EnDev countries did take place in the Governing Board deliberations; this concerned the countries Myanmar and Somalia about the coming about of an entry strategy for these countries in the programme ([16], p.7). It is too early to assess how the existing entry criteria will be applied in these 2 cases.

Since 2015, **Multi-Country projects** appeared in EnDev's Annual Planning documents ([17] p.9, [18] p.14, [2] p.15). These projects are often characterized as **side activities** in addition to activities in the main country (anchor country). Question is in these cases, whether and to what extent the current country selection criteria can be applied, because these are focused on entries in one country. Especially does this count for the criteria related to ownership (to what governmental agency with enough power to relate to?) of the partner country and expected sustainability (how strong governmental or private regional / local institutions can become?).

Phasing out [19]: Reasons for phasing out are high GDP / capita, crowding out by other donor activities (failing cooperation), (sub-)sector no longer in need, low results at high cost, lack of funds, political reasons. "Sector no longer in need" most probably means that access to modern energy has significantly improved. During the period, phasing out of countries did not occur, but since 2016 discussions were ongoing about the status of the EnDev project countries Burundi and Peru. In Burundi, the worsening political situation was the main point of concern ([20], p.4); for Peru was questioned what EnDev could add to the country's potential serving its own energy needs. EnDev Peru has submitted an (approved) upscaling proposal describing its exit strategy ([21], p.2). The upscaling will be used for a stepwise phasing out of activities.

In the *interviews* EnDev's donors considered the programme's entry and exit criteria as adequate, but they do hold different opinions on the number of countries the programme should cover. One donor wants to maintain flexibility, whereas another donor likes to **avoid that EnDev ends up in a hit-and-run strategy to make energy access possible for €20 pp**. Another three donors call for **caution that EnDev gets engaged in too many countries** at the detriment of the poorest and the quality of its implementation outputs. Two donors suggest reconsidering the **position of mid-income countries** in

the programme with contradicting questions: does involvement in these countries fit EnDev's image; should the perspective of quick upscaling lead to maintain these countries in the programme?

4.2.4. Selection and upscaling of individual projects and role of implementing partners

Upscaling of activities in existing country projects goes in accordance with clear **criteria and procedures**. The EnDev management announced that from 2016, the upscaling procedure within EnDev will change to make the recommendations from the management to the Governing Board more transparent. [22].

The new upscaling process comprises of two stages: (1) pre-selection on the basis of a limited format, and (2) preparation of full upscaling proposals for selected projects for submission to EnDev's Governing Board.

The procedure consists of 4 steps [11]:

1. Country projects at the end of their current phase or with considerable growth and/or co-financing opportunities are invited to work out **short upscaling proposals**
2. **Joint evaluation** of these proposals during a 1 day workshop through the EnDev team, based on criteria and quality; if proposals are accepted country teams receive recommendations regarding budget and content if necessary and are invited to elaborate full proposals
3. **Full proposals** checked against recommendations
4. **Presentation** of the proposals in the Annual Planning document for approval by the Governing Board.

The EnDev appraisal **criteria for each up-scaling proposal** are: Cost efficiency (EUR per person reached), Sustainability, Impact, Market Development, African country, LDC, Strategic importance, Electrification activity, Bonus for higher tier technologies, and Remote area. The proposal format takes into account the indicators which have been agreed with the Governing Board for EnDev phase 3, and introduces an additional bonus criterion for concrete gender strategies.

In the Governing Board the question came up, whether EnDev management is using a **scoring system**. This is not the case: EnDev management analyses each country in detail in a group discussion, the performance of the country programme, and the need the requested upscaling should address. EnDev management takes decisions based on **90 % consensus**, but **no scoring** is done when the upscaling criteria are applied ([20], p.5). Donors are invited to participate in the discussion or nominate someone to participate. There are different opinions about the advantages and disadvantages of an elaborated scoring system. The suggestion shows that this **topic needs further discussion** (see also 5.4.2).

In interviews with *donor agencies*, the question was posed by one of the donors to what extent IPs were allowed to steer the identification and implementation of energy sector projects. Another question was also what portfolio size and composition could still reasonably be handled by the current IPs. In that sense, the **Implementing Partners are in a relatively powerful position** (some handling a significant number of projects, identification of new projects etc.). Therefore, the **selection process of implementing partners as well as the process of fund allocation to project proposals might need more transparency** (see also 5.4.2).

Among *IPs participating in the online survey*, the identification of projects in EnDev countries was considered as appropriate, but about 1/3 of the respondents did not have a point of view on this matter. However, EnDev local teams often perceive their role as steering. The selection process for upscaling was mostly seen as appropriate.

4.3. Quality control and performance assessment

EnDev over the years developed a monitoring system which is considered today as a “**high end system**”. It is focused on results at outcome level and tries to merge the results achieved in a variety of energy access projects (improved cookstoves, SHS, biogas household systems, hydro and PV mini grids etc.) into a few meaningful figures which show EnDev’s relevance with regard to the SDGs, in particular SDG 7. Its general approach is to be **rather conservative** in different assumptions and counting/reporting methods to ensure credibility vis-à-vis the public and its donors. This explains why the current overall figure of “18.2 million people who got access to modern energy” through EnDev stands vis-à-vis a “broader impact for 77 million people who were indirectly supported by EnDev – together with others – for access to sustainable energy”. The overall (**global**) **baseline** is that 2.7 billion people do not have **access to modern cooking stoves** and 1.2 billion does not have any **access to electricity** (ratio 3:1). Consequently, EnDev strives to apply about the same ratio: among the 18 million beneficiaries 13.8 got access to ICS and 4.4 million to electricity. The fact that also in the baseline figures (2.7 and 1.2 billion people) clearly differentiates between cooking and electricity and do not specify to which extent an “overlap” exists, is an additional argument to keep the figures also in the EnDev monitoring separate.

Under the stove activities, a **minimum of 50% should at least reach tier 2** and the remaining tier 1. But a reasonable solution has to be identified in cooperation with the respective target group.

Each country project provides:

1. **Quantitative** information: outcome, adjustment factors and cost, as much as possible in a standardised Excel tool (outcome calculation sheets OCS) and
2. **Qualitative** information: analysis of progress and expected future developments, contained in the Country Sheets.

The outcome monitoring system uses quite accurate and reliable data and processes them according to a well-defined methodology. This makes it reliable and transparent. Using a wiki approach and standardised tools results in robust results comparable across countries. The figures also help to identify **upscaling potentials** in specific projects and for the programme as a whole.

The monitoring system allows to a large extent to **control quantitative results** and even to make **some (!) “cost-benefit-analysis”** in the sense of “how much budget was spent for activities which finally contribute to supply a number of people with a certain energy service”.

EnDev’s Monitoring and evaluation is seen as really **strong and robust by all donors**; not only the **bi-annual reporting** is good, but also the **financial monitoring** is quick and to the point. Some donors found the level of detail too complex for higher political levels, whereas appreciated the orientation to results. EnDev’s M&E department not only was good in providing regular reporting, but also in prompt reporting on request on special issues, like the linking of SDG7 with other SDGs or to promptly attend to issues donors brought up (questions from parliament, or higher political levels). Most donors recognised that collected data could be better used i.e. for **in-depth analysis**. They stressed that this always should be done **in direct service of the programme**: for more efficiency, for

feeding into bigger knowledge frameworks (e.g. spatial data), for EnDev's R&D, or for local ownership in putting up NDCs. Who and how such in-depth analysis should be done remained an open question in the interviews.

The more critical remarks (and partly even serious complaints) came from *implementing partners* and (external) *partner organisations*. One of the main points of criticism is the overall **"averaged" benchmark of 20 Euro/person** which leads to communicating all energy services in ONE figure²⁷. The critics suggest a stronger differentiation between technologies and some even suggest by country. EnDev should show a more differentiated picture to the outside avoiding incentivising **the cheapest technology** which guarantees to achieve the target figures with lowest cost per person and which may lead to a disregard of more difficult targets such as job creation, sustainable supply of social infrastructure. Opposing an ICS in Malawi and an MHP mini grid system in Indonesia illustrates that a system based on one benchmark compares apples and oranges: the production cost of an **ICS in Malawi is around 1 USD** and it is sold at 2 USD (transport subsidised by EnDev) serving 5 persons, meaning cost of less than 1 USD per person for the service as such. The cost per person for the **MHP mini grid** is in the order of magnitude of rather **50-100 USD**²⁸ (and even about two times higher in a PV-battery mini grid). This is only the cost for the system as such, not taking into consideration the cost for EnDev as a programme (for implementing partners, capacity building, awareness raising, management etc.). But it is clear that the service from an ICS is hardly comparable to an electricity connection, although both are counted under the same overall figure called "people who got access to modern energy". It was stated that EnDev in general is very humble in the way it is reporting mainly on indicators; it cuts off too much information which is a pity because there is so much learning which could be shared with an international audience. Another person prefers the monitoring to have (clearly) quantitative and (somewhat) narrative elements; the proportion should remain. M&E should serve the learning from experiences, challenges, and possibly feed research.

The second main criticism was about the **reduction factors**. The monitoring does a number of reductions (some increases) based on a very **complex system of eight parameters** (general correction factor, replacement factor, EnDev contribution factor, double energy factor, double EnDev factor, windfall gain factor, sustainability factor, replacement stabilisation factor). In addition to the fact that the whole system is very difficult to understand and these parameters can partly only be roughly estimated, outsiders do not know and let alone understand these calculations. And last but not least, results presented by different donors are not comparable at all ("we are unfair to ourselves"). To simplify the monitoring, EnDev already plans to reduce the above mentioned eight parameters to three, namely **assignability, attribution factor, sustainability** and a "correction factor" as a reserve. A third aspect mentioned by IPs is the requested reporting: although the general focus is on numbers of ICS, SHS or connections and cost per connection, now the management is more and more asking for reporting on other aspects e.g. context and **policy framework**. This context is indeed very crucial but some IPs stressed that such aspects should then also be **part of the monitoring** and become a funding criterion to be more consistent (indicators required). This requires a clear strategic decision. The same is valid for **knowledge management and capacity building**, meaning such activities would require direct indicators to be incentivised.

²⁷ This aspect is (also) treated in subchapter 3.4, but its importance in the M&E system is described here.

²⁸ In Indonesia this cost is nowadays covered by the Government while EnDev provides TA, training, quality assurance etc.

The *online survey among IPs* provided the following result: Nearly all respondents considered the collected data in EnDev's M&E as **appropriate to assess the programme progress**; most of them were very convinced about that and a distinct minority had a more moderate stand. All respondents made more **reservations about the extent to which these data could steer decisions**, but still a considerable minority see data as essential for decision-making. The methodologies for counting and calculating the quantitative outcomes were seen as **adequate, sufficient, and cost-efficient**.

The **counting system** [23] to a certain extent is somehow a bit contradicting in its level of accuracy in the various steps which lead to the final outcome figure. On the one hand, many beneficiaries are individually registered. On the other hand, several assumptions are made in the sustainability factor (not ALL beneficiaries continue using ICS after its end of life) and replacement factor (beneficiaries who already had an ICS and after its end of life not to be counted again if they buy a new one). Although EnDev also does surveys to substantiate the assumptions on the various factors, most probably such figures are not representative for all 26 countries. So in the end a very accurate figure based on registration of consumers is then adapted with a factor which is much less accurate. This is maybe also the reason for complains from IPs which collect the figures in the field and then feel like "punished" if it is reduced by such a factor.

Finally, the question needs to be raised about the **long term vision of the monitoring system**. Currently, the data are mainly stored by GIZ and it is not known whether this is (also) done by a national (governmental) organisation or whether data exchange happens systematically. To involve a local institution would create more ownership for the target and would allow for further use and analysis of the data and information. On the other hand, the Global Tracking Framework GTF which tries to collect as much data as possible from countries worldwide to monitor the achievement of SDGs depends on such national data bases which often do not exist. A national anchorage of a data base would ideally also put more pressure on other projects and programs to report in a similar way.

The EnDev monitoring system is quite complex and it developed over years based on the reporting requirements but also based on field realities (what is measurable). The reviewers did NOT undertake an in-depth analysis of the different counting mechanisms, the procedures and the efficiency of the system. The main focus was to understand the overall logic and in particular **how this monitoring system steers the program and its activities**. This led to recommendations on how to adapt the system (see 5.3.25.3.2).

5. Recommendations and strategic building blocks

5.1. Achievements, strengths and added value of EnDev

The subchapters 3.2 up to 3.7 in the first part of this report provide an in-depth review of the EnDev Programme following the OECD DAC criteria. The current subchapter 5.1 only provides a very short summary on achievements, strengths and added value of EnDev.

Given the global gap in achieving SDG 7, not only in LDCs but also in rural remote areas of many non-LDCs, EnDev as a global programme is addressing “**relevant topics for relevant target groups**”. The assessment has shown EnDev’s high relevance

1. With regard to the **Agenda 2030**, because it significantly contributes to SDG7; it over-achieved its goal of assisting 15 million people to get access to modern energy. In addition, it contributes to a number of other SDGs (e.g. gender, health)
2. With regard to the **Paris Accord**, EnDev contributes to reduction of CO₂eq emissions of 1.9 million/year which is not so high in absolute figures. However, by creating awareness on energy efficiency (cleaner and more efficient cooking) as well as on renewables, EnDev is “co-initiator” of a transformational change towards a more climate friendly development. In addition, it clearly contributes to increase peoples’ resilience against impact of climate change.
3. For the **target group**, through its implementation focus and pro-poor approach
4. For its **donor agencies**, by well aligning the programme with the respective policies (selection of countries, including RBF, gender focus, and finally its outcome-orientation)
5. Even for other **international organisations and initiatives** where EnDev is highly appreciated in particular for its implementation focus, achievement of target figures, its hands-on experience in a number of energy fields

EnDev’s **effectiveness** is mainly proven by the achievement of its own target figures. The Programme achieves high **efficiency**. The lean and flexible management and the professionalism of the local implementation partners certainly contribute to the high efficiency of EnDev. The occasional impact analyses together with the collected outcome figures substantiate EnDev’s achievements on **impacts**: increased cooking and lighting efficiency, reduced air pollution related to better health in particular for women and children, contribution to gender balance, reduction of climate damaging emissions, strengthening of pro-poor markets, job creation, capacity building, and an overall improvement of living conditions.

With regard to **sustainability**, a number of activities point into the right direction and show e.g. development and strengthening of markets, successful O&M, take-up of EnDev approaches in government initiatives and policies. However, in some fields like capacity building, knowledge management, environmental and social aspects, even more should be done.

Program management and in particular the **monitoring system** are very strong features of EnDev and given the complexity and diversity of the programme, it is impressive how well and smoothly it is operating since so many years while continuously improving its tools and processes.

In the following subchapters, those **future strategy elements** are highlighted which need particular attentiveness. At the end of each subchapter, **recommendations** are explicitly summarised.

5.2. Contribute to transformational change

Currently EnDev addresses policy topics in a “country-specific” and “opportunity driven” way. During the interviews, there was general consensus that EnDev should keep its implementation focus while taking into account the importance of necessary **cooperation with governmental institutions** to better facilitate **transformational changes** and thus to increase sustainability. In particular, in cases where a sudden change in government policy completely countervailed EnDev activities, the limitations became evident. Several persons expressed the risk that EnDev by benching into other areas, like policy advice, the implementation focus might be diluted.

The following stepwise approach is recommended:

(I) Contribute to transformational change

- For each specific country intervention, **assessment** of
 - the importance of the **policy level** for the respective (planned) approach
 - **opportunities** to increase sustainability
 - possible “connectivity” / integration of planned intervention in (future) **national energy system** (see also 3.7.2).
- If the assessment above reveals that the policy context needs to be addressed:
 - Check for **cooperation partners** already active in that field to feed in ideas and experiences
 - If cooperation is impossible, plan **own activities** on policy framework (or else leave the country). Policy advice gets more **credibility** if implementation is done in parallel!
- Strengthen **relationship with governments to stimulate more ownership** (convey the message “EnDev activities support your work”).
- **Integrate** planned EnDev interventions on policy level **in outcomes and monitoring!**

Governments should be attracted to become more interested in building on EnDev’s interventions instead of building parallel structures. A strategy on how to achieve this must be country and context specific (e.g. not only information but also more frequent consultations on certain decisions).

Given the fact that some EnDev donors as well as the European Commission are also supporting the future “**GetPro**” (Global Energy Transition Program; successor of EUEI PDF), EnDev should closely coordinate and harmonise its activities with this initiative and pro-actively place its own experience there.

5.3. Develop portfolio strategy and translate it into M&E system

5.3.1. Develop portfolio strategy

(II) Develop portfolio strategy

- **Address ALL agreed outcomes “in the (core) programme”** (supply of social infrastructure, productive use, income generation, recycling or at least safe disposal of electronic waste, etc.) while accepting a higher overall benchmark or clearly disclose (even more) different benchmarks for different outcomes; see also (III) below.
- Develop a clear policy on **private sector involvement** in EnDev:
 - **(local) SME should be involved** wherever possible and useful to ensure a stronger link between energy access and **local economic development**
 - **International enterprises** should (only) be involved if they provide products / services not available (at the required quality) in the country and/or if they provide knowledge and technology transfer and thus build up local capacity

Addressing ALL agreed outcomes “in the (core) programme”

Nobody among the interviewees and in particular from the donor agencies seriously challenged the **“3:1 ratio”** (improved cooking versus electricity access), a ratio which to a certain extent also reflects the balancing between “pro poor/leave-no-one-behind” and “higher tier levels”. Since there was no serious objection to the ratio, it is not suggested to significantly change it. The idea of leapfrogging of technologies, meaning that e.g. electricity access at the same time allows for cleaner cooking is mostly not realistic. Due to affordability reasons people tend to continue cooking with traditional methods (even 3-stone-fire) despite having access to (some) electricity. In some cases, also the limited available (electric) capacity leads to “stacking” of multiple energy solutions instead of leapfrogging. It is recommended to **put more focus on generation of a local added value to increase the long term impact on the local economy**, be it for ICS or electricity supply systems, **independent of the tier level**.

The so far not fully achieved targets are a) **“number of supplied social institutions”** and b) **“number of supplied SME’s”** (see Table 4). The second one is closely related to the so-called “productive use” and finally also to “development through energy access”. The following paragraphs briefly summarise points which were brought up in the interviews with respect to this second aspect.

All *interviewed IPs* stated that “pure energy access” and “development through energy access” should go hand in hand: the first can be a stepping stone for the last. Where economic development is more advanced, further development through energy access should be focused on, as in such circumstances multiplier effects of energy access are larger. In Middle Income Countries (Peru, Indonesia) this is the case, but the same was claimed for Kenya²⁹.

²⁹ Lower-Middle-Income Economy

Also, several *donor representatives* recommended to make a **closer link** between **poverty reduction and energy access** (“not just to improve living conditions by providing a light in your house or having a cleaner/better stove”)³⁰. EnDev is seen (by most interviewed donor representatives) as a vehicle to support the local business sector and local manufacturing, create local added value and supply chains. It is also understood that this requires **additional resources / input** (“we are ready to pay a higher price if it is produced locally”). It was added that “this is fully acceptable because it is a **worthwhile long-term investment**”. With regard to “productive use in mini grids” a confinement was made that creating a local added value should be a focus of EnDev **if** that is possible. Meaning that for each specific case, the critical question should be “is it energy which hinders development”. More specifically, to facilitate **productive use** requires 1) to electrify people with **potential** for productive use and 2) to provide the case-specific, required **assistance** (micro finance, linking up with other programs etc.). It was suggested that potential for “**development**” can become a **selection criterion**, possibly in cooperation with other donors.

A *cooperation partner* suggested to even differentiating between activities that create real added value and those which tend to mainly “**revolve money**” (e.g. SHS-kiosk where people charge their mobile). From his point of view, to really add value to a product or to create additional value often (mini) grid electricity quality is required (even higher voltage levels for machinery). On the other hand, EnDev’s experience has shown that in specific cases also off-grid productive use can be developed.

The statements show the shared firm conviction with respect to the **importance of income generation, productive use and business development** but also the **uncertainty about the best approach** to ensure success.

More **internal discussions** between EnDev and its donor community are required to create more awareness on limitations but also opportunities with regard to targets which go beyond the stipulated quantitative core outcomes. The programme is steered by the quantitative outcomes to be achieved based on an overall limited budget which entails the so-called 20 Euro/person benchmark. This leads to the effect that e.g. the outcome figure “number of supplied SMEs” (despite being part of the outcome indicators) is somehow “less attractive to be followed up” (by IPs) because it requires more resources and thus can lead to an increase of the benchmark (reported by the specific country project). Therefore,

1. Either such outcomes need to be “**treated separately**”, by introducing separate budget lines, or any other “envelope” to avoid that such activities lead to an increase of the overall average benchmark of 20 Euro/person and thus are in a way “dis-incentivised” or
2. “**Remain all in the (core) programme**” while accepting a **higher overall benchmark or clearly disclosing (even more) different benchmarks for different outcomes**. Why not to clearly specify the fact that facilitating sustainable access to energy for a health centre provokes cost of x per health centre whereas facilitation of “access to improved cooking” provokes cost of y Euro/person? This sounds more than logical, because the supply of a health centre is much more complex but in the end also serves a lot of people.

³⁰ One of them stated that “the cost structure for renewables opens up new opportunities in mini grids” thus also creating more options for development through energy access.

It is crucial to identify an approach which allows allocating **similar importance to the different outcomes**. One justification for the second approach is the context of Agenda 2030 where SDG7 is closely linked to other objectives³¹. The first option maybe allows a more “controlled” planning where in the end probably even donors have more flexibility to emphasise one or the other topic. By creating new budget lines (new accounts?) EnDev would underline the seriousness for achievement of the targets (depending on the assigned budget). On the other hand, such budget lines would again significantly reduce EnDev’s internal flexibility. Given the often short-term funding commitment, EnDev management definitely also needs the freedom to re-allocate funds (see 4.2.2 and 5.4.1).

The plan to introduce a so-called **“innovation challenge fund”** bears the risk that (the rest of) the Programme targets even more the “low hanging” fruits and anything which appears more difficult and cost intensive is left to the innovation area. **“Pioneering” should continue to be taken serious and remain part of EnDev’s core business** to be assigned the required significant budget. A maximum of 1.5 million Euro for the total of three complex themes, namely “economic development”, “social infrastructure” and “recycling of solar access products waste”, and with a maximum of 3-4 projects (under each of them?) is considered to be not sufficient given the importance of the topics. . The feedbacks from the interviews would also back a more courageous decision up. The innovation fund is meant to be used to try out something with the idea in mind to scale it up once the success is proven. Potential disadvantages of such an innovation fund could be

- There will be limited or no possibilities to **address the specific problems across the board**³² and thus after all **postpone more far-reaching changes** in the program. Individual pilot projects will for the time being only be implemented with very limited budget and thus not (yet) solve the broader problems (e.g. electronic waste which continues to accrue).
- The problem of provoking an **increase of the benchmark**, once the approach is to be scaled up, would remain and would still require a solution. Thus, rather sooner than later a commitment (also budget-wise) for the topics needs to be made.
- Often an approach which turns out to be successful under specific circumstances is not / less successful in another situation, meaning that **“100% transferability” cannot be expected**. So, it is considered more promising to make a more in-depth analysis of experience which is already available within EnDev and draw conclusions for more distinguished future activities program-wide.

Topics like productive use, support of SMEs, job creation, local value creation but also sustainable energy for social infrastructure as well as “sustainable fuel for a sustainable stove” can become **inherent part of the future strategy (also reflected in the monitoring)** and thus would NOT lead to a fragmentation of topics but rather complement and strengthen the hitherto achievements. As mentioned under 5.4 this could even open opportunities for new cooperation and additional funding.

³¹ This could also facilitate communication and cooperation with various government organisations in EnDev countries which may have a broader view on the Agenda 2030 (poverty alleviation) and NDCs.

³² Meaning at an EnDev-wide scale

Formulation of a strategic EnDev policy on private sector involvement

This aspect is linked to the preceding one, because it targets the need to differentiate between “types of private sector”. Since most donor agencies support the idea to create as much local added value as possible, finally a good “supplier approach” is needed, meaning to determine **when large (international) supplying and investing partners are needed** also to guarantee a certain quality level and/or to provide knowledge transfer and capacity building to local actors and **where (local) SME can take care to ensure a stronger link between energy access and local development**. It was also stated in an interview that the international private sector should not become too dominant in national settings. The general recommendation is to give priority to the local private sector wherever possible and to involve international companies in particular where specific products/services are locally not available and technology transfer is required.

E.g. in Indonesia, the project checks which equipment and services can (currently) be procured locally. In parallel, it deliberately targets **fields where the highest value creation is possible**. For PV mini grids this is currently within EPC contracting and service. Consequently, while PV components need to be imported, EPC contractors and service providers (for O&M) should be Indonesian. EnDev here focuses on capacity building and quality assurance. In the mini hydro sector anyway almost all equipment and services are available in Indonesia at an internationally competitive price and ensure highest creation of added value. E.g. in the SHS sector in Kenya, international companies have more and more pushed local companies aside. “The SHS-market is currently over-heating; financiers are ALL keen to be part of SHS-PAYGO market. The market is flooded with money; every week a new deal is announced”. In such a situation, EnDev’s role should not be to further promote the international private sector but rather to provide support to the local economy to survive or by addressing regulatory deficits (e.g. related to privacy issues).

Based on implementing experience, it can already be well analysed **which approaches in the past helped the local private sector**, where did international companies eliminate local ones (what are positive and negative impacts) and what was **EnDev’s role** in such developments. Based on this kind of analysis EnDev should develop **clear (eligibility) criteria on how and where to involve (which) private sector and for which overall target**.

5.3.2. Translate into M&E system

(III) Translate into M&E system

- **No longer lump together electricity and improved cooking in one figure.** This overall figure is perceived by many stakeholders as too artificial, because e.g. access to an improved cookstove is considered not comparable with having a connection to an electricity grid. In **the logframe (outcome figures)**, in monitoring and in reporting, it should be separated between
 - **Cooking energy**
 - **Off-grid electricity and**
 - **mini grids / grid connection**

Telling “three different stories” with their added value allows presenting the broad spectrum of achievements with additional **contributions to other SDGs** (for each).

- Consider a **new / different indicator related to income generation** in general. The monitoring should even more strictly value any kind of additional income generation, instead of only “job creation” (currently calculated as full-time job equivalents) and “supply of SMEs” and thus also clearly incentivise local production vis-à-vis imported products.
- Adaptation of outcomes should contribute to: **better reflect the additional benefits** of the program, **simplify the current monitoring** and make better use of the **collected information**. In this context, it would make sense to also incentivise “fuel switch”.
- Capitalise **multiplier effects** by working on a higher (institutional) level to **enable local experts**, associations etc. to train manufacturers, entrepreneurs etc. (subject to country strategy; see (I) above). This needs to be reflected in a “multiplication factor” in the monitoring.
- Ensure transparency on **EnDev’s allocation of resources**: procurement of goods vs. “soft services” (what does the benchmark include and additionally required resources)

Some *donors* stated that an **average overall benchmark of € 20 per person** is an acceptable parameter for them whereas a number of others are open for different approaches. They endorse the need for transparent reporting on an overall benchmark together with an **additional indication of technology specific benchmarks**. Some even opted for the possibility to differentiate between countries and/or continents or per types of technology and transformational costs. Although EnDev’s cost efficiency is appreciated, most of them agreed that the € 20 per person does not have to be carved in stone and that an increase is an option, provided that EnDev can give sufficient justifications for that, e.g. last mile supply, cost increases, support of transformational changes.

From *IP interviews* it turned out that benchmarks in general are acceptable, but their height and application should be more open for upward change. This last was brought forward, because the **“Leave no one behind” target** is still valid, in spite of (partly) changed economic situations in EnDev’s programme countries, and the new vulnerable groups to be serviced (i.e. refugees).

Presenting specific cost per person for specific energy services (from different technologies) is a crucial precondition to provide **more transparency** which is the **basis for any arguing**. E.g. in Kenya and Bangladesh, EnDev can achieve quantities, but in other countries the higher costing for pioneering work does not create high outcomes. It is understood that the current benchmark of € 20 can only be kept because of the ratio of ICS and electricity interventions (about 3:1) which corresponds to the current global energy poverty ratio (2.7 billion without clean cooking and 1 billion without electricity), since ICS interventions are by far cheaper. If there are e.g. good arguments to apply higher ICS standards (still affordable to users) then even for ICS a higher benchmark can be justifiable.

In general, it needs to be mentioned that any decision made on addressing **additional and/or modified program targets** (see paragraph 5.3.1) needs to be reflected in an adaptation of the outcomes in the logframe, as well as in the monitoring and reporting system accordingly. So far, the programme is very much focused on achieving its quantitative outcomes (at a given cost benchmark). Consequently, any strategy change can only materialise if it firstly, either directly contributes to the (currently defined) outcomes as specified in the present logframe OR if it is defined as separate (new) outcome. And secondly, to become effective, it either should not lead to an increase of the overall benchmark of 20 Euro/person OR it requires a separate budget line.

It should be considered whether a new / different indicator related to **income generation** in general could be more meaningful than the current indicators. The monitoring should even more strictly value any kind of additional income generation, instead of only “job creation”³³ (currently calculated as full-time job equivalents according to ILO standard) and “supply of SMEs” and thus also clearly incentivise local production vis-à-vis imported products. EnDev currently only considers the first impact level but no co-benefits or indirect effects of energy access. Presenting e.g. “number of people with additional income” would allow for more flexibility in considering a whole number of positive impacts which are already achieved by the program but are not yet fully reflected in the monitoring (any income in the energy service value chain like selling ICS, as well as income through using energy like operating a kiosk, agro-processing etc.). Some improvement in this respect has already been achieved in the recent past, but a more in-depth analysis and re-thinking is recommended. It needs to be analysed and discussed if the outcomes could be slightly adapted not only to better reflect the added values of the program but also to **simplify the current monitoring** and to make better use of the **collected information**. In this context, it would definitely also make sense to also incentivise “fuel switch”³⁴ and reflect it in this indicator (in a sense that saving money for avoided purchase of fuel can be considered as “additional income / savings” compared to the baseline scenario. Additional or slightly different (but still easily measurable) indicators in line with donors policies can possibly be better “sold” at political level; like e.g. “number of people benefitting from additional income” (through manufacturing, supplying energy services, adding value to their products etc.)³⁵.

To create more transparency about what the so-called benchmark/s are standing for, it is recommended to report - in particular towards EnDev’s donor agencies - in an even more transparent way on **what the main expenditures of EnDev include** (e.g. marketing, advertising, training, quality management, financial management, “soft services”) and what they do NOT include (e.g. procurement of goods, hardware cost for mini-grids where this is covered by other programs / governments). This information (see also 3.5) is considered relevant to create awareness on what is feasible based on a specific available budget. In particular, when talking about the **achievement of higher tiers** of electricity supply, EnDev will either need significantly more funding or (even more) strong partners who bring in the required investment.

³³ Example Malawi: from a development point of view, is it better that hundreds of farmers produce a few ICS and sell it in particular in case they just had a bad harvest or is it better to have a big factory with a very few full-time employees? Most probably both options make sense and therefore both should be “rewarded” by EnDev’s monitoring system.

³⁴ E.g. productive use can be easily promoted where already some small business exists which can be expanded or where “fuel switch” allows for CO₂ reduction (a diesel-driven mill can be connected to a mini grid based on renewables); however, “fuel switch” so far is NOT rewarded at all in the monitoring system because it is no “new access”!

³⁵ Without quantifying the amount of additional income which would be too difficult

5.4. Secure funding, specify entry & exit strategies more clearly and strengthen implementation structure

5.4.1. *Secure Funding*

(IV) Secure funding

- EnDev management to work and lobby towards **longer term funding commitments** to maintain the necessary flexibility AND required continuity.
- **Conditioning and earmarking of funding to be reduced** from donor side to avoid exponential growth of EnDev's already very complex accounting system to allow for sound incremental growth of EnDev. Different types of earmarking hamper economies of scale in the management while increasing the required effort for risk management in fund administration.
- EnDev to **systematise its cooperation activities in a target-oriented way**. An analysis should for each potential partner identify
 - specific features and possible fields of cooperation with EnDev with regard to: information exchange, lobbying, theme/subject-based advocacy, funding channels / joint investments
 - Possibilities for linking up with these initiatives

Secure continuous funding from current donors

The performance of the programme is appreciated by the current donors. Half of the donors emphasise that EnDev should not drastically change its strategy. It was also stated that the programme's funding level should remain the same. The fact that EnDev is quite diverse (regions, topics) also allows the whole group of donors to **find its respective focus in it**, be it SSA, improved cookstoves, mini grids or others. The current donors still consider EnDev's objectives as valid and they should in general not be changed. To have the **SDG7 as an overall goal** is considered important by all donors. It allows for **additional funding simply for up-scaling**. Several donors mentioned options on how to increase their contributions:

1. **Establish "regional" (or "topic-specific") budget lines**³⁶ (e.g. to contribute funds in particular for Africa or for mini grids). Specifically, for BMZ with its regional clusters, more contribution would be possible if EnDev had regional service lines. Thus, e.g. for Africa, funds from the Marshall Plan, and in particular from the initiative Green People's Energy GPE ("Grüne Bürgerenergie") could be made available; this also requires a stronger focus on higher tiers (e.g. mini grids), more productive use, job creation and in general a focus on economic development
2. A strong vote was given on making available **knowledge on "energy access implementation practices"** for influencing international forums. EnDev should play a role in leveraging such knowledge to the international community

³⁶ It would have to be discussed in the GB whether such a rather "broad" earmarking would lead to an exclusion from the GB.

3. More funds should be used for the pursuance of **transformational changes**. This is mainly relevant for activities which need to be embedded or at least be linked to bigger national (energy) programs, which require a conducive legal framework or other policy support.

In general, it was stressed by several donor representatives that they might be able to provide additional funding and even accept a benchmark of > 20 Euro/person if “**good arguments** are provided”, e.g. if higher tier electricity supply is provided to create more **opportunities for development** through energy.

Endev management is already developing concrete ideas to **strengthen its donor communication**: EnDev management staff intends to address donor agencies more intensely (also bilaterally) to better address their needs, harmonise EnDev with other bilateral and global activities of its donors, provide more in depth information on EnDev’s activities (feasible approaches, address inflated expectations etc.) and last but not least maintain the faithful cooperation.

For the benefit of the EnDev programme, the management should work and lobby towards **longer term funding commitments** that allow EnDev to build a **buffer** to maintain the necessary flexibility AND required continuity of a global programme. In particular if stronger focus is to be put on mini-grids, longer project terms are a vital pre-condition.

(Strategic) cooperation partners for leverage and additional funding

With regard to cooperation partners at global strategic as well as on country / implementation levels, EnDev needs a more **consistent strategic approach**. The management sees a clear need to well define where existing partnerships need to be strengthened and where new ones need to be established.

The way how EnDev is structured, it can design **interventions which are flexible, innovative and fit to specific country objectives**. This creates opportunities to define partnerships with others which do not have these comparative advantages, but can bring in **significant funding and strength in negotiating with government institutions** (e.g. WB, ESMAP). If ideally, WB also applies EnDev’s approach in a specific country not only significant up-scaling could be achieved but also more sustainability by establishing such an approach even as a government program / strategy. Vice versa, EnDev activities can be seriously hampered if a government takes decisions which are NOT consistent with the EnDev approach. In some cases, “even the WB can come in and kill Endev’s approach, not (necessarily) because it is its decision but because it is the government’s strategy.” Reasons for governments not to take up EnDev’s country-specific approach can be manifold: the EnDev approach might simply not fit to a large scale investment approach or a government might have a high ambition for implementation speed. The approach of smaller-scale implementation by EnDev and then scaling up by the WB is already done here and there but it is not done in a systematic and intended way. WB/ESMAP suggests to seriously considering a **closer partnership** in that sense to create a win-win-situation. It is explicitly seen as a common task of both partners where WB needs to clearly commit itself. It was suggested to take one country e.g. Ethiopia (for off-grid and mini-grid solutions) to test and learn from such an approach.³⁷

³⁷ Interview with ESMAP / WB

In particular in the SHS sector, the various financing organisations should merit some attention, since there are more and more players active (e.g. Acumen, sun-funder, Rockefeller Foundation etc.)

The GET-Pro program (in the previous phase called EUEI PDF) is also seen as an important partner. With its network into national governments and international initiatives it may be well positioned to include EnDev's lessons into national and international **policy making** ([24], p.34). A clearer assignment of roles between EnDev and GET-Pro and a clear agreement on cooperation still needs to be defined. This is also very much backed by the donors (BMZ and others) who contribute to both.

Despite (maybe because) disagreement on some fundamental aspects, **cooperation with the GACC secretariat** should be followed up and intensified (see also 3.2.4). In one interview with an IP it was even suggested that EnDev should also work (together with others) on higher tiers to serve another market segment and be more visible. While adhering rigidly to cost efficiency, EnDev should also take other bigger projects into account like e.g. LPG stoves (mentioned by totally three interviewees, "have an eye on what is going on"). EnDev needs to do both (at least at global level), meaning to look at lower AND higher tiers; the latter are important for targeting especially urban and peri-urban households. GACC itself proposed to develop common country-specific strategies in cooperation with EnDev. EnDev could benefit from GACC's broad(er) outreach, strength in awareness creation, its link to government institutions etc. It was proposed to develop a common activity plan which could include exchange workshop/s, approach of common donors (demonstrate alignment of activities) etc. EnDev should defend its arguments for biomass and for lower tier, locally produced stoves and the added value of those compared to (in some regions) unaffordable "high-tech" stoves (example Malawi). Each country / region has different requirement and "appropriateness" can widely differ. With a common (country-specific) strategy, both programs can better leverage each other in all relevant aspects including enterprise development, policy aspects, strengthening of national alliances, attracting investors etc. There is sufficient meat and a common goal for cooperation even though technical experts may start discussing on nitty-gritty details of a stove.

Based on its new strategy, EnDev should do a more in-depth analysis of organisations and initiatives in the current "development landscape"³⁸ as a basis for a more **target-oriented and strategic systematization of cooperation activities (on global, management and country level)**.

Such an analysis should for each potential partner identify

- Its specific features and possible fields of cooperation with EnDev with regard to
 - Information exchange
 - Lobbying
 - Theme/subject-based advocacy
 - Funding channels / joint investments
- Possibilities for linking up with these initiatives

A clear reasoning for cooperation activities needs to be developed as basis for a straight forward cooperation strategy. To identify and prioritise future (most promising) cooperation partners, it is recommended to also **involve the GB members** ("brainstorming session"). Most of them might be in a good position to provide information about other initiatives and activities which they ALSO support

³⁸ Information can also be found in [47]

and where they would like to see more synergies with EnDev. **Alignment with the NDC Partnership** can be a useful and vital complement to this, because under this partnership a coalition of countries and institutions work to mobilize support and achieve ambitious climate goals while enhancing sustainable development; GB members may be involved themselves through their ministries in this partnership, or else work closely with colleagues involved herein.

The EnDev Strategy Document [15] stresses that EnDev does not have a political mandate; its added value stems from its experiences on the ground based technical advisory services. Hence, EnDev has to be selective in the way it engages itself in initiatives at global level. One possible approach could be that EnDev as a performance based program with its limited budget (“limited” relative to the overall objective to achieve SDG 7) seriously **involves other partners to multiply its own approach** and thus accelerate energy access. This can be achieved e.g. through awareness raising (GACC), through lobbying of EnDev’s approaches via a “mouthpiece” like SE4ALL or through up-scaling by financially stronger “large-scale implementers” (WB or other MDB).

Finally, sharing the new draft strategy with the most important strategic partners could be a way to create a broader basis of confidence.

If, in general, closer cooperation with (national and international) partners to leverage impact is considered as promising strategy of EnDev then, maybe, the targeted outcomes and consequently also the monitoring system need slight adaptations. **Accelerating access through cooperation** should then be incentivised so that efficiency gains are NOT “superseded” by a very low **attribution factor**.

5.4.2. *Specify entry and exit and entry strategies more clearly*

(V) Specify entry & exit strategies more clearly

- Increase **transparency** in country selection process
- Better definition of application of possible entry and exit strategies in close connection with the **overall project objective in this country**.
- Define whether same entry/exit criteria can be applied for **multi-country activities**.
- Decide whether **weighing factors** need to be attached to each of the entry/exit criteria.

The number of countries hosted by EnDev is rather stable, but since 2015, **Multi-Country projects** were introduced. These projects do have a hybrid character, when they are compared with the ‘regular’ Country Project that fits in the logic to set-up and organise projects along single country lines. The application of existing entry and exit criteria cannot be automatically transplanted to these multi-country projects.

To formulate for each specific country intervention either an entry, or exit strategy requires a clear understanding of the overall (country-specific) objective to be achieved. In that sense, in either case a strategy is a crucial element of project planning and shows “where do we want to go”, who are the relevant stakeholders, who need to be trained on which topics, etc.

An **exit strategy** assumes firstly that EnDev’s phasing out criteria are properly applied, which includes transparent decision-making with a clear insight in the relative weight of each criterion. Secondly then, follows answering the question what organisations (governmental/non-governmental) can be involved either in taking care of remaining project activities, or in case this is not possible, in decently

dismantling existing project structures. Thirdly, a chain of decisions to be taken regarding dissolving programme infrastructure, labour contracts, and physical infrastructure has to be identified. And: fourthly, simultaneously, needs to be taken care of transparent communication with relevant stakeholders, and networks about the reasons for and steps taken in the phasing out process.

Phasing out is not easy; many reasons can be identified for such decision, and require a thorough phasing-out assessment. Hence, EnDev considers phasing-out as an explicit option for EnDev countries, or country components. The reason to elaborate on phasing-out and not so much on entry criteria/procedures lies in the fact that EnDev has seen an **incremental growth of its programme** over the years, now reaching 25+ countries. Question now is: **where is the limit?** EnDev is a programme that in its current shape is a very complex programme. Different technologies, huge variety of implementation approaches and practices, specific features per each programme country, or multiple interactions with partners and stakeholders are all requiring their proper attention. As EnDev's staff is lean, the question is to what extent the programme can cope with the entry of more countries and/or more Multi-Country projects in the programme. Wouldn't it make sense to include in the country entry criteria an additional one that looks at the **manageability** of the entering of new countries and/or Multi-Country projects?

5.4.3. *Strengthen implementation structure*

(VI) Strengthen implementation structure

- Open up for a **diversification among implementing partners**
- Re-consider the **selection process** of such partners to ensure professional work to maximise outputs: which services to be tendered (and how), increase transparency in processes, evaluation of implementers, open up for proposals from "outside of EnDev".
- Develop a clear, transparent and straightforward strategy allowing for **fair competition, result-oriented selection** and **flexibility** for the management.

About the selection of "Implementing Partners", no clear majority opinion crystallised during the interviews. In addition, the term "Implementing Partners" was **understood very differently** by different stakeholders: for donor agencies even GIZ was seen as implementing partner, for the GIZ country representatives it was mainly the local NGOs but also (local) enterprises and consultants which won specific tenders (e.g. RBF). Regarding the highest level of implementation partner, namely GIZ / RVO, only very few critical comments were made on the dominant role of GIZ, whereas the majority agreed on GIZ / RVO doing an excellent job in managing and implementing the programme. Looking at local level, donor agencies, by and large, found that a good selection was made so far. There was much satisfaction about the work of SNV, HIVOS or Practical Action. Interviewed GIZ staff at country level, expressed the following concerns and advices:

Experience shows that scaling-up activities "too thoughtlessly" can easily **overburden implementing partners** like smaller NGOs which despite broad and in-depth experience in a topic simply do not have the structures (including sufficient competent and experienced staff) to multiply their activities. A **thorough assessment of available capacities and a realistic project schedule** should have priority over ambitious target figures. "More money does not necessarily mean more results". The strength of small local organisations with small overhead cost can easily become a weakness if their capacities are not well assessed. To avoid this, a **diversification of implementing partners** is important. This

also reduces implementation risk in case one organisation has difficulties (then not the whole project is paralysed). To give a fair chance to more local organisations a **national call** may make sense in many cases while also taking into consideration networks of national professional associations / organisations, national Steering Committees etc.. An appropriate selection process is even more relevant for **technically more complex activities** like biogas systems, mini grids and grid connection. Even if e.g. a mini-grid is tendered and based on this procedure then assigned to a private investor/implementer somebody needs to overlook the process and understand the technical and financial aspects to make a good selection among the bidders and control the implementers work. Whether and at which level tendering or call for proposals makes sense should be discussed with donors and responsible GIZ staff on country level, based on the experience made so far. In addition, it is understood that currently **project proposals for a new funding round** mainly come from those who are already part of EnDev (country representatives and IPs) and only in rare cases “external proposals” emerge. The process and criteria for project approval are well defined and established but seem to be in a sense “not open to the outside”. This is also due to the fact that EnDev funds compared to the number of already ongoing projects / activities are quite limited. In specific cases like for **RBF tendering** to select implementing partners proved to be appropriate. But when tendering implies a focus on the lowest cost of offered services, caution is justified: EnDev’s features **require high quality inputs**, in which local knowledge, reputation, and embeddedness are key.

An analysis on high level energy initiatives in Africa [4] has shown that “skills development is the least common form of technical assistance”. If EnDev wants to make a difference here - also to improve sustainability - implementing partners and their professionalism and experience are crucial.

EnDev should be open for a **diversification among implementing partners** and re-consider the **selection process** of such partners. The following aspects should be considered:

- EnDev management (in cooperation with responsible GIZ staff in countries) should re-consider **which services shall be tendered** and (where necessary) what type of selection process (open tender, restricted call for proposals) should be applied, while still, leaving sufficient flexibility to consider specific country situations.
- make the processes **more transparent** (to GB and the “outside”) to address possible criticism of favoritism (why only SNV, HIVOS, Practical Action etc. since there are much more organisations around?)
- **evaluate / compare** the work of implementers; ensure (some) quality control
- re-think wider opening up for project proposals **from “outside of EnDev”³⁹ to diversify approaches**

A clear, transparent and straightforward strategy needs to be developed, which allows for **fair competition**, ensures **result-oriented selection**⁴⁰. Hereby, the number of potential competitors and the **trading off between competition and need for local capacity building** needs to be considered.

³⁹ Meaning a proposal prepared in a certain EnDev country by organisation(s) that are not part of the EnDev setup.

⁴⁰ Also compliance with social and environmental standards was mentioned as criterion. High quality standard and long lifetime should be relevant in tendering for equipment. Both should be followed even if that leads to a higher benchmark!

5.5. Structure knowledge management and innovation

(VII) Structure knowledge management and innovation

- EnDev management with its donor community to take strategic decision on **importance of knowledge management** for the Programme
- Define (a least) a **1% share of the budget** for knowledge management to
 - facilitate cooperation with global and local partners (through sharing of lessons),
 - increase EnDev's impact at different levels and
 - significantly contribute to its visibility (see also (VIII)).
- **Energypedia - an excellent "tool"** at hand - to be used to bring information pro-actively to a broader public through new knowledge products, social media, webinars, online courses etc..

Several *donors* stressed EnDev's comparative advantage in having a wealth of implementation experience which is needed to generate knowledge about what works and what not. More **in-depth analyses, processing and finally dissemination of relevant evidence based materials makes much sense**. Some even called this the "**core of EnDev's orientation**", given its own budget constraints on the one hand and the option to expand its cooperation with large international parties on the other hand. In particular people in the field and implementing partners have very relevant experience which should be made use of, also by others (SE4ALL, WB/ESMAP etc.) and think tanks like IRENA and REN21. However, it was also understood that this information is not (yet) all readily available in a well-structured way. The **type of knowledge products** and the **relevance of its contents** (for specific target groups) need to be defined to be usable.

A reasoning given by an *IP* was that EnDev "should not focus too much on actors (they often change) but **rather on the tools which are needed**. EnDev should itself compile this knowledge and spread (itself) its own success stories to a bigger audience". Some interviewees stressed the importance of knowledge sharing directly among *IPs* (meaning partners like MAEVE; ADES, SNV, Practical Action etc.) not only via GIZ (HQ). It was mentioned in a few interviews that knowledge exchange within EnDev works better than with the outside. However, even when looking at a few statements made by *IPs*, one could get the impression that not everybody has the "full picture". This is not to blame *IPs* but rather to stress the importance to **make experience from the variety of technologies and countries easier available** for them to digest and integrate it in their work.

Also, EnDev's *current partners* expressed that EnDev's lessons learned and information should be more **systematised and then proactively disseminated** ("to create a body of knowledge on what works on the ground is the greatest value of EnDev"). Among the examples mentioned were: integrate awareness raising in government campaigns, integrate various contents in curricula of (vocational) schools. EnDev can provide valuable input also to other organisations and partners (in the various EnDev countries) to also strengthen their capacity building.

In this context, also RBF was mentioned as an example: among all players in this field, EnDev's experience on the ground is very valuable. The report on RBF ([25]) was considered to go not sufficiently into depth and detail, in particular on what is crucial when designing an RBF.

Current cooperation partners of EnDev also stressed the importance of EnDev to bring in more **research and field experience into the international debate, sharing lessons in a more pro-active way** and to put even more focus on **knowledge management**. Even in cases where e.g. WB due to an opposing government policy cannot follow the EnDev approach, there are still many things to be learned from each other. The technology fields in which EnDev is working are still evolving and need support and innovation in terms of implementation mechanisms where EnDev needs to bring in its experience.

Special focus should be put on implementing partners as main contributors and main users of knowledge products. It seems that at the field / implementation level much less cross-country exchanges happen compared to the higher EnDev management level. More formats should be identified to also facilitate **direct South-South-exchange** among local actors.

Topics, described below, should be addressed (partly resulting from interviews). However, to take a final decision on what is needed most urgently a more **systematic inventory** is needed.

- **Market development** while adhering to a **pro-poor approach** (e.g. for ICS, pico PV, SHS): it needs to be understood where markets so far are developing and where not (e.g. more SHS “under the grid” or “beyond the grid”); how to address the difficulty to serve rural areas⁴¹ which is often less attractive.
- **Local value chains and local added value:** which value chains have been successfully developed with regard to energy systems and the use of energy (see also point c) below); which activities had really improved the LOCAL economic situation and improved affordability of energy services (“energy for development” instead of pure “energy access”); what are different technologies contributing (including mini-grids)
- What are pre-conditions for successful development of strong and well-functioning **supply chains** for increasing/improving access to energy (e.g. ICS, biogas).
- Sustainable **energy supply of social infrastructure** (school, health centres etc.)⁴²
- Profound analysis on **successes and failures of mini grids:**
 - a) which method was applied for technology choice (i.e. resource assessment or others)
 - b) Systematic comparative analysis of differences between PV- and MHP-mini grids including investment cost / cost drivers, O&M cost, total generation cost per kWh⁴³; analyses of requirements with regard to training approaches, supply chains, critical number of systems in a region, tariff regulations, ownership and operation models
 - c) Successes and failures of productive use activities (preconditions, impact)

Energypedia already gives a good introduction on mini grids⁴⁴, however an update and significant replenishment with lessons learned is required (e.g. experience from 600 implemented mini grids in Indonesia). Currently, e.g. “The Good & Bad of PV Mini Grids” is planned analogous to [“Good & Bad](#)

⁴¹ “... results for pico-solar solutions are mainly achieved in urban or peri-urban areas, and in the cooking sector attention seems to focus on higher tier solutions like gas and LPG, and biomass gasifiers that also predominantly sell in urban areas and in a few more developed countries.” [11], p.23.

⁴² e.g. why was target overachieved in Kenya with 200% whereas serious difficulties are encountered in other countries

⁴³ Experience from Indonesia: rough calculation showed that tariff for PV needs to be 5 -10 times higher than for MHP

⁴⁴ https://energypedia.info/wiki/Mini_Grids#Overview

in MHP". So far, some knowledge products on best practices have been developed by EnDev but much more could be done if sufficient resources were made available⁴⁵. In general, **energypedia** is an excellent platform for knowledge exchange and could be developed to become a "capacity building platform". It could e.g. offer webinars and online courses to be held by experts on specific topics. Still, such online activities should be complemented by real face-to-face trainings, in particular where field courses for practical skills are required. Energypedia with support from EnDev experts should develop more synopses and summarizing analyses on specific topics as introduction for project implementers / practitioners and to guide them to more in-depth information.

5.6. Develop strategic outreach

(VIII) Develop strategic outreach

- EnDev management to **develop an updated communication strategy** on global level and assist with a helping hand on specific communication strategies on country levels: contents, target groups, communication channels.
- Transfer this strategy into an **action plan with a 1- or 2-year schedule**, defining concrete measures like participation in workshops, conferences, writing of policy briefs, etc.

The lack of visibility of EnDev was frequently mentioned as a problem to be tackled by EnDev management. Cooperation partners, donors as well as IPs consider higher visibility as important to **increase EnDev's impact**. Despite its strong implementation experience and its successful approaches EnDev seems to be less perceived and heard than others. Better visibility helps to have **more influence** on what others do (government organisations, other donor programs etc.), to establish **strong partnerships** and possibly also to attract **additional funding**. An improved knowledge management and making available relevant **knowledge products** also to other programs and projects is also a strong tool to improve visibility, reputation and impact.

With its newly established pillars "Key Account Cooperation Management" and "Public Relations & event management" within its management structure, EnDev already prepared the ground for improvement in this field. The interviewees recommended EnDev to show self-confidence and with that attitude have a clear look at its own image. This should not result in doing an elaborate assessment but in better organising external relations. EnDev should more systematically check what others are doing, e.g. "green mini grid helpdesk" of AfDB (funded by DFID), E4I (formerly known as GVEP), GACC, ARE etc.. Not only what makes sense on an **operational** level to get more results out of invested funds (see 5.4.1) needs to be considered but also what helps for **visibility** and thus finally to improve **political influence**.

Once having agreed upon the main objectives of the process and the respective addressees, their needs and expectations, a visionary PR work should finally identify all comparative advantages and achievements of EnDev including, e.g.:

⁴⁵ Question of ownership of data can a problem to be considered.

- “Achievements **in figures**” (where EnDev is already very strong)
- Linking of **different SDGs**: ICS in connection with gender and health, electricity in connection with social infrastructure (schools, health centres etc.), productive use, job creation and creation of local added value etc.
- Covering different environmental and **climate friendly technologies** (renewables and energy efficiency)
- Transfer of **know-how and skills**

With regard to ICS, EnDev has a leading role at global level and should not hide its light under a bushel. The fact that “stoves kill people”, but still extremely limited funds are allotted to change that, and the outstanding role of EnDev in this context, should be much more highlighted. Given its broad variety of topics, EnDev has the unique possibility “to pull the most exciting rabbit out of the hat”. On the other hand, its implementation focus is still the joining link.

6. Bibliography

- [1] EnDev, «Strategy 2014-2018 Energising Development – Phase 2,» June 2014.
- [2] EnDev, «Annual Planning 2018, Energising Development - Phase 2, Draft Version for the Governing Board,» 2017.
- [3] «UN Sustainable Development Agenda,» [Online]. Available: <http://www.un.org/sustainabledevelopment/development-agenda/>. [Zugriff am 15 February 2018].
- [4] «Africa EU Energy Partnership,» [Online]. Available: <https://www.africa-eu-renewables.org> . [Zugriff am 15 February 2018].
- [5] «Africa Renewable Energy Initiative,» [Online]. Available: <http://www.arei.org> . [Zugriff am 15 February 2018].
- [6] «Nationally Determined Contributions NDC,» [Online]. Available: <https://ndcpartnership.org> . [Zugriff am 15 February 2018].
- [7] «One Gigaton Coalition,» [Online]. Available: <http://www.1gigatoncoalition.org> . [Zugriff am 15 February 2018].
- [8] «Light Up and Power Africa AfDB,» [Online]. Available: <https://www.afdb.org/en/the-high-5/light-up-and-power-africa-%e2%80%93-a-new-deal-on-energy-for-africa/> . [Zugriff am 15 February 2018].
- [9] «Green Climate Fund,» [Online]. Available: <https://www.greenclimate.fund/home>. [Zugriff am 15 February 2018].
- [10] EnDev, «Driving markets to scale Lessons learned from stimulating energy access markets with results-based financing,» 2017.
- [11] EnDev, «EnDev GB response to Eval_with comments from management update 2017,» 2017.
- [12] «UNDP Supporting Transformational Change,» 2011. [Online]. Available: <http://www.undp.org/content/dam/undp/library/Cross-Practice%20generic%20theme/Supporting-Transformational-Change.pdf>. [Zugriff am 15 February 2018].
- [13] EnDev, «Progress Report 2015,» April 2016.
- [14] IRENA, «Solar PV in Africa: Costs and Markets,» IRENA, 2016.
- [15] EnDev, «EnDev Strategy 2019-2022,» 2017.

- [16] EnDevManagement, «Minutes of 15th EnDev GB Meeting».
- [17] EnDev, «Annual Planning 2016 Energising Development - Phase 2,» EnDev, 2015.
- [18] EnDev, «Annual Planning 2017 Energising Development - Phase 2,» EnDev, 2016.
- [19] EnDevManagement, «phasing out endev countries,» 2016.
- [20] EnDev, «Minutes of the 14th Meeting of the EnDev Governing Board, May 2016, Bern,» EnDev, 2016.
- [21] EnDevManagement, «Minutes of 16th EnDev GB Meeting».
- [22] EnDev, «Up-Scaling Proposal,» 2015.
- [23] M. Andreas, «Adjustment Factors,» 2017.
- [24] EnDevManagement, «Progress Report 2016 - draft for Governing Board,» GIZ, 2016.
- [25] EnDev, «Mid-term Evaluation, Evaluation of the Results-Based Financing for Low Carbon Energy Access Facility RBFF within EnDev, Final Report,» EnDev, 2017.
- [26] A. Michel, "EnDev Monitoring für Monitoring Netzwerk G300_v02," 2017.
- [27] SEOR, «Accountable in Silence, Evaluation Dutch/German Partnership EnDev, Final Report,» 2008.
- [28] G. EnDev, «OCS Factsheet,» 2014.
- [29] G. EnDev, «EnDev Monitoring Tool Factsheet,» 2014.
- [30] G. EnDev, «EnDev Monitoring Factsheet,» 2016.
- [31] R. Barbara, «EnDev's Gender Approach,» 2017.
- [32] EnDev, «Mini-grids as part of EnDev interventions».
- [33] EnDev, «Mini-Grids in EnDev, Presentation for the EnDev Governing Board, 23-24 May 2017,» 2017.
- [34] M. Andreas, «Monitoring & Evaluation Intro,» 2017.
- [35] M. Andreas, «EnDev Monitoring - Tools & Prozesse, Netzwerktreffen - Wirkungsorientiertes Monitoring,» 2017.
- [36] EnDev, «Empowering People, Report on Impacts,» 2015.

- [37] EnDev, «Empowering People, Report on Impacts,» 2016.
- [38] EnDev, «Discussion of upscaling concepts,» 2017.
- [39] BMZ, «Considerations about a strategic focus of EnDev,» 2016.
- [40] «EnDev's proxy-indicator approach for assessing the quality of a Cooking Energy System,» 2017.
- [41] EnDev, «Gender Analysis,» 2014.
- [42] E. Wiki, «Outcome Monitoring - Overview,» 2017.
- [43] «UNFCCC Paris Agreement,» [Online]. Available:
http://unfccc.int/paris_agreement/items/9485.php. [Zugriff am 15 February 2018].
- [44] «Climate Investment Fund,» [Online]. Available:
<https://www.climateinvestmentfunds.org/fund/scaling-renewable-energy-program>. [Zugriff am 15 February 2018].
- [45] EnDev, «Cooking Energy System (CES) Evaluation,» 2017.
- [46] EnDev, «Up-Scaling Proposal,» EnDev (wiki), 2016.
- [47] A. E. E. P. AEEP, «Mapping of Energy Initiatives and Programs in Africa,» May 2016. [Online]. Available: http://www.res4africa.org/wp-content/uploads/2016/06/aEEP-mapping_of_initiatives_final_report_may_2016-1.pdf. [Zugriff am 18 February 2018].

7. Annexes

7.1. Main takeaways from the online survey

Main takeaways of the survey: EnDev Strategic Evaluative Review

1. General aspects and underlying methodology

Since not all stakeholders could be interviewed, an online survey had been implemented to get feedback from a larger number and thus a **broader variety of stakeholders** thus better reflecting the various EnDev countries and different technology interventions. In addition, the research questions have been formulated in a way to get a more **quantitative picture** on a number of relevant questions. In general, an even number of possible answers (e.g. 4 options: not achieved, more or less achieved, achieved to a large extent, fully achieved) had been chosen, to quickly and clearly evaluate whether the overall assessment is rather positive or negative. However, to avoid missing important background information and additional remarks, each question also had a “comment field”. This allowed (in many cases) to get an even more detailed picture. In some cases, such commented answers were difficult to understand because they would have required knowing the specific country project more in detail.

1.1 In total 32 respondents have given their returns on the Survey by answering multiple-choice questions and open questions. In total 32 respondents came from 24 EnDev countries and 2 from Germany/The Netherlands. The next table displays the repartition of respondents with their countries of operation, their organisational affiliations and their operational positions.

Countries	Nr of resp.	Organization, background
Bangladesh	1	Senior Advisor GIZ/RVO
Bangladesh, Kenya, Rwanda, Tanzania, Uganda	1	Director market development CLASP (http://ades-international.org)
Benin	1	Component manager GIZ
Bolivia	1	Project coordinator GIZ
Burkina Faso	1	Head of country project GIZ
Burundi, Eastern Congo	1	PMI GIZ/RVO
Cambodia, Laos, Vietnam	1	Regional EnDev RBF Project Manager GIZ/SNV
Central America (Nicaragua, Honduras, Guatemala)	2	Project team leader, Regional coordinator GIZ
Ethiopia	2	EnDev Dir Ethiopia, Director EnDev country project GIZ/RVO
Ethiopia, Nepal	1	Technical advisor, project manager, consultant GIZ/SNV
Germany	1	Advisor rural electrification GIZ
Ghana	1	Component manager GIZ
Indonesia	1	Coordinator/Program Development Manager GIZ/RVO/HIVOS
Kenya	2	Program manager, Project manager GIZ/RVO/SNV
Liberia, Sierra Leone, Guinea	1	Director GIZ
Madagascar	2	Project manager ADES
Mali	1	Project manager GIZ/RVO
Mozambique	2	Moz EnDev Director GIZ, Country Director AVSI Foundation
Nepal before Benin	1	Team leader GIZ/SNV
Nepal	2	Project manager, Country project management GIZ/SNV
Netherlands	2	Senior advisor renewable energy, Consultant SNV
Tanzania	1	Project manager GIZ/SNV
Vietnam	3	Managing director SNV, Project leader SNV, Project manager commercial driven biogas sector Vietnam SNV

1.2 All respondents are linked to program/project implementation either directly in the field as project manager, indirectly as program coordinator, sector specialist, or consultant. Most of the respondents are working on GIZ contracts (18), whereas the other come from EnDev's other

managing organisation RVO (4), or implementing organisations like SNV (8), CLASP (1), AVSI (1), and HIVOS (1).

1.3 The Questionnaire of the Survey consists of 23 prompting / multiple-choice questions, and 15 open questions, of which 9 are asking for explanations on the answers on the prompting multiple-choice questions and 6 general questions on the EnDev programme.

1.4 The 23 prompting / multiple choice questions concern:

General data

- Q1: Position of the respondent
- Q2: Country in which respondent is working or has worked
- Q3: Relevance of the answers for the access technologies ICS, Pico PV, SHS, PV mini-grid, Mini Hydropower, Household biogas, Grid interconnection, Others

Achievement of EnDev's objectives / outcomes and related investments

- Q4: Extent objectives/outcomes have achieved
- Q5: Investments justified compared to other programs/projects
- Q7: Any current project activities unnecessary and to be given up
- Q9: Extent project activities contribute to more gender balance
- Q10: Appropriateness local capacity building for intended objectives
- Q11: Extent of sustainability of outcomes in specific fields

Features of EnDev's main strategy

- Q17: Does strategy mean less cost-efficient pioneering or grasping opportunities
- Q18: Indication of what approach should be the coming years
- Q19: Cooperation with other organizations/initiatives, private or finance sector

Positioning EnDev within development landscape

- Q21: Extent of specific EnDev programme activities to objectives Agenda 2030
- Q22: Extent of specific EnDev programme activities to objectives Paris Agreement
- Q23: Complementarity specific EnDev program activities to other donor programs

Important EnDev features

- Q25: Importance of National impact of EnDev pro-poor activities
- Q27: Assessment of added value of EnDev's global features for EnDev projects
- Q29: Appropriateness of identification of individual projects
- Q31: Appropriateness of selection process for upscaling projects
- Q33: Adaptiveness of EnDev program to framework conditions at country level

Monitoring & Evaluation EnDev's programme activities

- Q34: Appropriateness of requested data by EnDev for assessing progress
- Q35: Appropriateness of these data to steer decisions
- Q36: Suitability of methods for counting and calculating quantitative outcomes

1.5 The 9 questions asking explanations on prompting/multiple choice questions concern:

- Q6: Additional measures required for achieving objectives
- Q8: Explanation on project activities considered unnecessary/to be given up
- Q12: 3 Hints/indicators for quality proof of sustainability
- Q13: 3 Hints/indicators for quality proof of non-sustainability
- Q20: In case of no cooperation with others: why not, and what cooperation options
- Q24: National impact of EnDev pro-poor activities
- Q26: 2 most important transformational changes/national strategy changes
- Q30: Steering role local EnDev team in identification projects
- Q32: Assessment exit strategy EnDev project

The 6 general questions on the EnDev program concern:

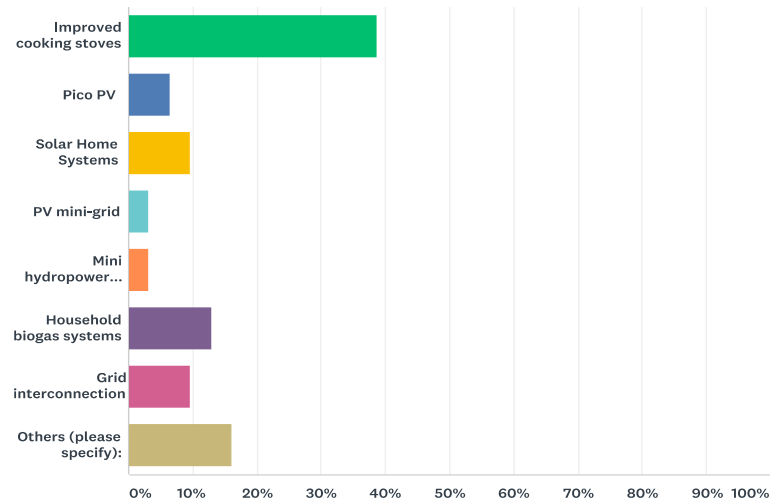
- Q14: 3 General strengths of programme activities
- Q15: 3 general weaknesses of programme activities
- Q16: Key lessons learned
- Q28: 3 Weak points in management setup of overall EnDev Program
- Q37: 3 Possible improvements in country programmes
- Q38: 3 Promising option for EnDev program as a whole

2. Main outcomes of the survey

2.1 General

Q3 Your answers in the following questionnaire are relevant for:

Answered: 31 Skipped: 1



ANSWER CHOICES	RESPONSES	
Improved cooking stoves	38.71%	12
Pico PV	6.45%	2
Solar Home Systems	9.68%	3
PV mini-grid	3.23%	1
Mini hydropower mini-grid	3.23%	1
Household biogas systems	12.90%	4
Grid interconnection	9.68%	3
Others (please specify):	16.13%	5
TOTAL		31

General Conclusion

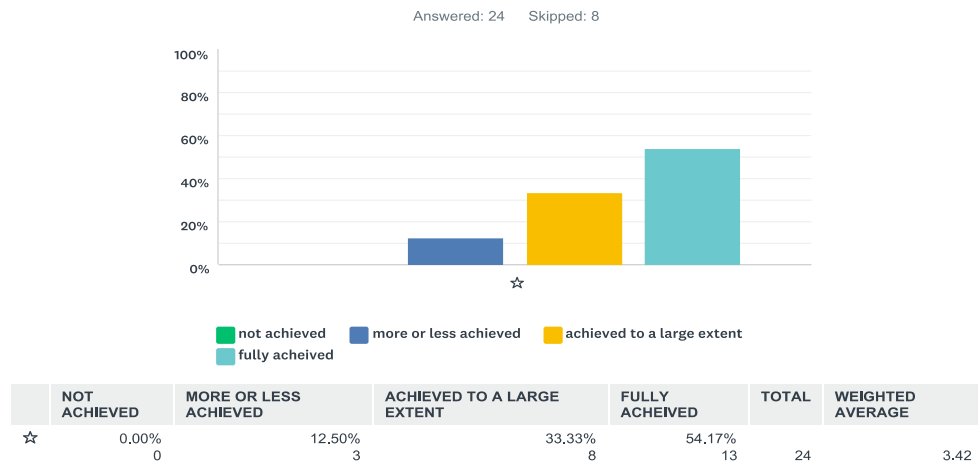
The answers in the questionnaire are the most relevant for ICS and to some extent for House biogas systems.

2.2 Achievement of EnDev's objectives / outcomes and related investments

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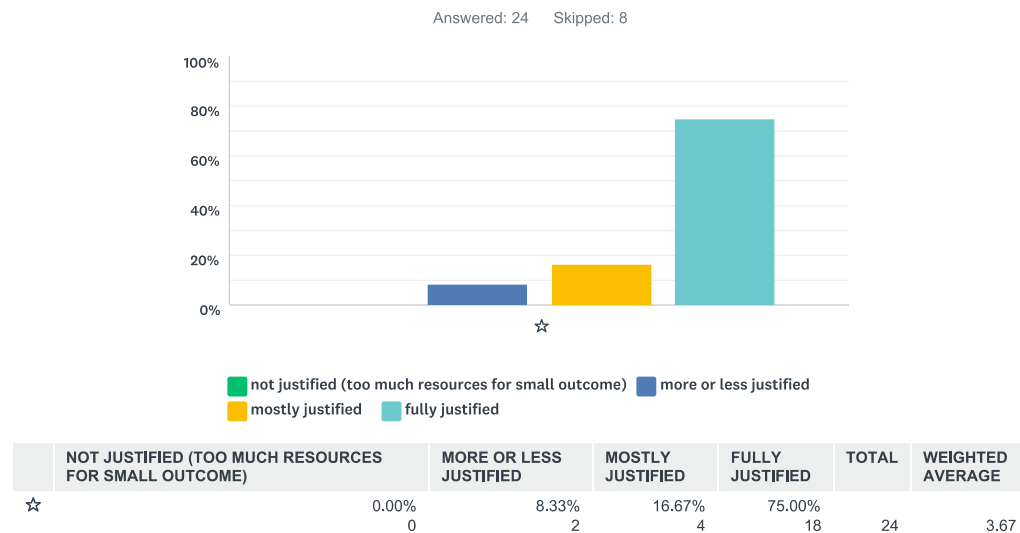
Q4 To which extent do the activities (you are referring to) contribute to achieving EnDev's objectives and outcomes



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Q5 Are the invested resources justified, compared to other programs/projects?



Q6: Which additional measures are required to achieve the objectives?

Answered: 23 Skipped: 9

Answers in different directions; no consistent picture

- *Comprehensive solutions* – Establishment market based biogas sector (4BF), or by RBF to empower biogas sector.

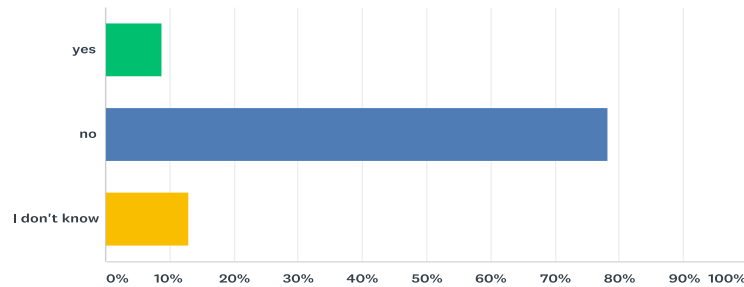
- *Attention to ICS* – Takes time to get Tier 4 stoves
- *Scattered remarks* – Cooperation with government, sector development, *marketing* & credit facilities, consumer guarantees (quality, warrants, awareness), technical training

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Q7 Is any of the current project activities / measures unnecessary and should be given up?

Answered: 23 Skipped: 9



ANSWER CHOICES	RESPONSES
yes	8.70% 2
no	78.26% 18
I don't know	13.04% 3
TOTAL	23

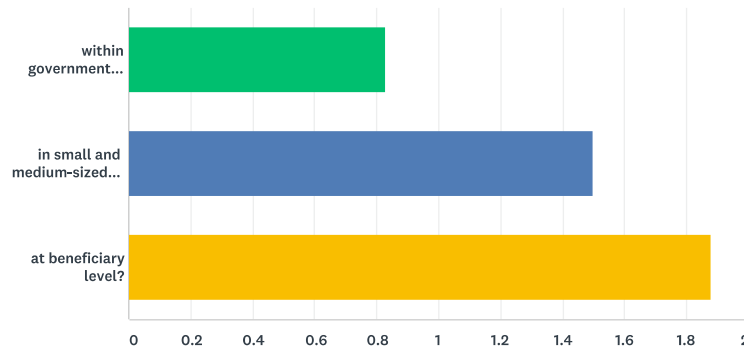
Q8: If yes, please explain

Answered: 7 Skipped: 25

No clear pattern in answers; some mention made of project planning, and planning adaption.

Q9 To what extent do your project activities contribute to more gender balance

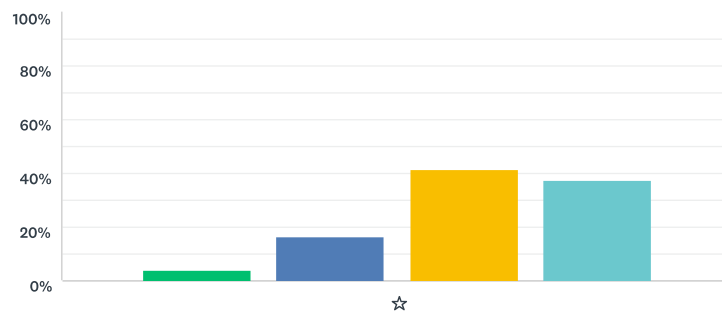
Answered: 24 Skipped: 8



	NOT AT ALL	TO A LIMITED EXTENT	TO A CERTAIN EXTENT	YES, VERY MUCH	TOTAL	WEIGHTED AVERAGE
within government agencies in the energy sector at local / national level	41.67% 10	33.33% 8	20.83% 5	4.17% 1	24	0.83
in small and medium-sized enterprises	8.33% 2	33.33% 8	29.17% 7	29.17% 7	24	1.50
at beneficiary level?	0.00% 0	12.50% 3	37.50% 9	50.00% 12	24	1.88

Q10 Are local capacity building and strengthening appropriate to achieve the intended objectives?

Answered: 24 Skipped: 8



■ not appropriate at all
 ■ more or less appropriate
 ■ to a large extent appropriate
 ■ yes, fully appropriate

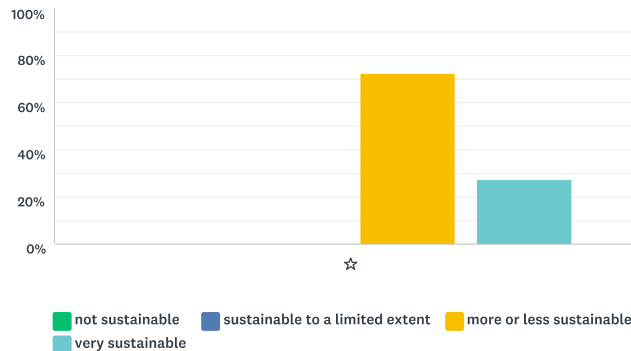
	NOT APPROPRIATE AT ALL	MORE OR LESS APPROPRIATE	TO A LARGE EXTENT APPROPRIATE	YES, FULLY APPROPRIATE	TOTAL	WEIGHTED AVERAGE
☆	4.17% 1	16.67% 4	41.67% 10	37.50% 9	24	3.13

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Q11 To what extent do you consider the outcomes (in the specific field) to be sustainable?

Answered: 22 Skipped: 10



	NOT SUSTAINABLE	SUSTAINABLE TO A LIMITED EXTENT	MORE OR LESS SUSTAINABLE	VERY SUSTAINABLE	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	72.73% 16	27.27% 6	22	3.27

Q12: Please give 3 hints / indicators which provide qualitative proof of sustainability

Answered: 25 Skipped: 7

3 hints per answer were mostly not given. Answers focus on: strengthened supply chains that sustain markets; entrepreneurship, sometimes added to this improved credit infrastructure, and consumer interest/product quality mentioned. Access technologies linked this; ICS, pico solar, biogas

Q13: Please give 3 hints / indicators which provide qualitative proof of non-sustainability

Answered: 24 Skipped: 8

3 hints per answer were sometimes given. Answers focus on: Market distortions, Distorting governmental policies, limited pay-back discipline/capacity consumers, lack of spare parts, unstable retailers, weak maintenance infrastructure. Access technologies mentioned: ICS, pico solar.

Q41: List 3 general strengths of the specific program activities with short comments

Answered: 25 Skipped: 7

3 hints per answer were hardly given. Answers focus on: Successful supply chain strengthening/market acceleration mentioned often in connection with RBF, RBF positively, but also negatively judged. Access technologies mentioned: ICS, pico solar, biogas, grid extension.

Q15: List 3 general weaknesses / bottlenecks of the specific program activities and suggest actions for improvement

Answered: 25 Skipped: 7

3 hints per answer were sometimes given. Answer focus on: Problems at implementation level, hassles to implement RBF properly, doubts about its suitability for building new markets, limited affordability of products, limited possibilities for demand creation, insufficient product quality, low consumer purchasing power, lacking after sales services.

Q16: Give three lessons learned

Answered: 25 Skipped: 7

3 lessons learned were in some cases given. This concerned different aspects of EnDev's approach: top down approach more effective through utilities; integrated approach to promotion ICS consumer finance, training in ICS use and maintenance, and market sustainability – is this feasible in rural areas?); integrated approach to access to electricity: energy efficiency and to support development of SME of electricity clients; integrated to approach in biogas sector: stronger focus on market base with suitable credit lines, and abolition of government subsidies.

But mostly was referred to RBF positively and negatively. Positive: its challenges and stimulates the private sector's accountability and deliverance of value for money, action model for setting incentives good tool. Negative: Inflexible management, too much TA, extra capacity development, and facilitation required, small entrepreneurs benefited less from RBF, doubts whether can really RBF work for companies (how can they prove their potential without upfront payments?).

Conclusions on Achievement of EnDev's objectives / outcomes and related investments

Please note that all questions Q4 – Q16 were (not)/answered by minimally/maximally 20/10 persons; mostly this was 24/8.

The answers give a positive appreciation of EnDev's achievement of objectives and outcome for which the investments were justified. Most of the project activities were not seen as unnecessary, but contributed to a large extent to more gender balance at beneficiary level. Within the government this contribution was seen as considerably lower. The respondents perceived the size of this contribution within the SME to be between that of the earlier mentioned contexts. Most of the respondents did not consider local capacity building as fully appropriate for achieving the intended objectives; they expressed a certain hesitance to do so. The same counts for the sustainability of outcomes: here the hesitance appears more accentuated.

It is hard to draw general conclusion from all answers on the open questions, but these referred to many different aspects, except for 2 subjects:

1. the importance of strengthening supply chains (SME, credit infrastructure, product quality, consumer satisfaction) for increasing access to energy mostly with respect to ICS and household biogas;
2. the contradictory reactions related to the application of the RBF modality in supporting SME and building energy markets.

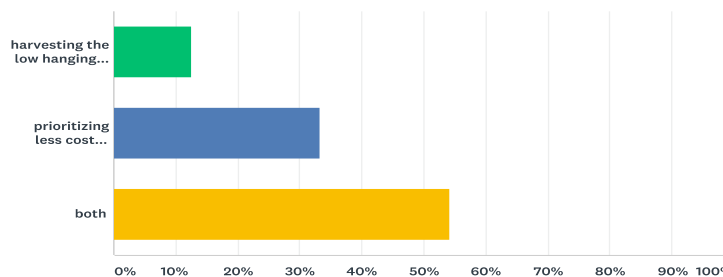
2.3 Features of EnDev's main strategy

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Q17 Indicate from the main strategy of your activities whether they either lead to:

Answered: 24 Skipped: 8



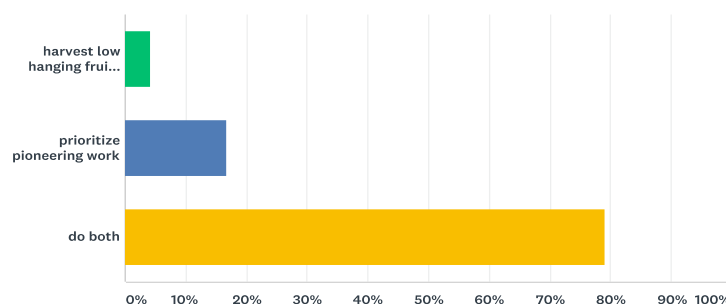
ANSWER CHOICES	RESPONSES	
harvesting the low hanging fruits or	12.50%	3
prioritizing less cost efficient pioneering work in new countries/geographical areas/poorer population segments for medium to long-term harvest	33.33%	8
both	54.17%	13
TOTAL		24

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Q18 Indicate what the approach in the coming years should be

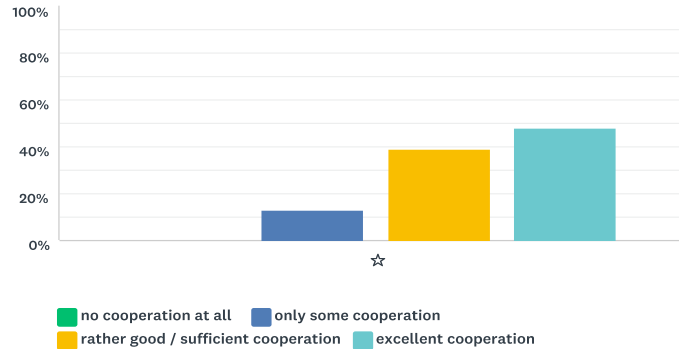
Answered: 24 Skipped: 8



ANSWER CHOICES	RESPONSES	
harvest low hanging fruits or	4.17%	1
prioritize pioneering work	16.67%	4
do both	79.17%	19
TOTAL		24

Q19 To which extent do you cooperate with other organisations / initiatives, with the private or finance sector?

Answered: 23 Skipped: 9



	NO COOPERATION AT ALL	ONLY SOME COOPERATION	RATHER GOOD / SUFFICIENT COOPERATION	EXCELLENT COOPERATION	TOTAL	WEIGHTED AVERAGE
☆	0.00%	13.04%	39.13%	47.83%	23	3.35
	0	3	9	11		

Q20: In case you do NOT cooperate, please specify if you see options for cooperation with others (whom?) and WHY so far you did not establish cooperation(s)

Answered: 7 Skipped: 25

Only 4 answers were given: (a) Big private companies perceive cooperation with EnDev difficult, because of EnDev's stressing due diligence, and program ownership. (b) Cooperation with TVET institutions was sought, but proved to be difficult; managing these schools was too demanding. (c) Alignment with World Bank difficult, because of its centralised way of operating without taking information from the ground into account.

(d) Ministries could not be trusted, because these aimed using EnDev results for election purposes.

Conclusions of EnDev's main strategy

Current project activities under EnDev's lead mostly to a mixture of prioritizing less cost-efficient pioneering (for new countries/areas, poorer populations) and harvesting low hanging fruits (grasping opportunities where they are) with a clear emphasis on less-cost efficient pioneering efforts. For the coming years this approach, this approach should be clearly reinforced; herein pioneering is still stronger than the 'harvesting', but both do have less importance on their own. The respondents take a more pragmatic stand, than they already do with respect to their current activities.

The cooperation with other organisations / initiatives and private or finance sector is mostly qualified as excellent and in the second place as rather good/sufficient, in spite of the doubts uttered with respect to the World Bank and big private companies.

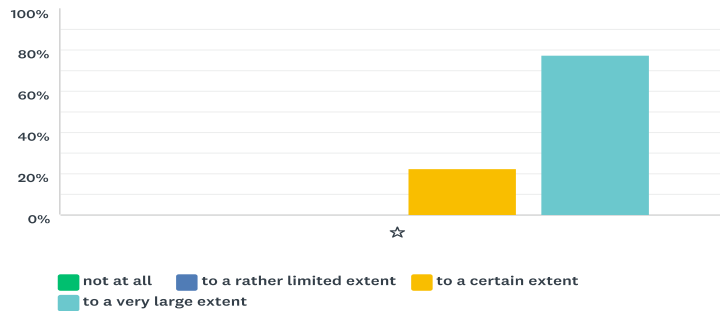
2.4 Positioning EnDev within development landscape

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Q21 To what extent do your specific program activities under EnDev contribute to the overall objectives of the Agenda 2030 (various sustainable development goals)?

Answered: 22 Skipped: 10



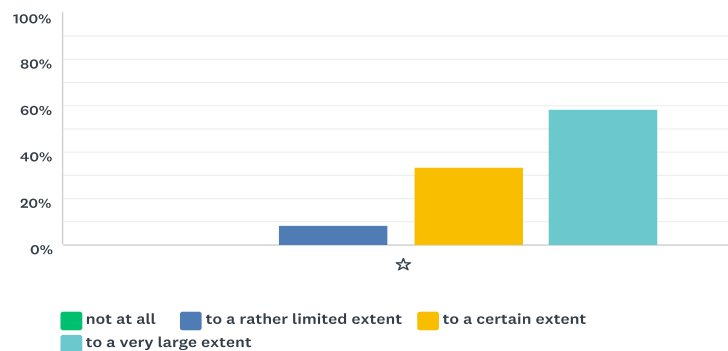
	NOT AT ALL	TO A RATHER LIMITED EXTENT	TO A CERTAIN EXTENT	TO A VERY LARGE EXTENT	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	22.73% 5	77.27% 17	22	3.77

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Q22 To what extent do your program activities under EnDev contribute to the Paris Climate Agreement (reduction of CO2 emissions and adaptation)?

Answered: 24 Skipped: 8



	NOT AT ALL	TO A RATHER LIMITED EXTENT	TO A CERTAIN EXTENT	TO A VERY LARGE EXTENT	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	8.33% 2	33.33% 8	58.33% 14	24	3.50

Conclusions on Positioning EnDev within development landscape

Specific programme activities under EnDev do very much contribute to the overall objectives of Agenda 2030, as well as to the Paris Agreement (reduction of CO₂ emissions and adaptation). For the last the assessment of the respondents is less outspoken: a considerable part sees specific programme activities under EnDev only contributing the a limited / certain extend.

When is referred to the complementarity of specific EnDev activities to programmes of other donors, the appreciation is very outspoken: those who answered this question (23 out 9) state this complementarity is complete.

2.5 Important EnDev features

Q24: In which field(s) do your pro-poor EnDev activities have a national impact?

Answered: 24 Skipped: 10

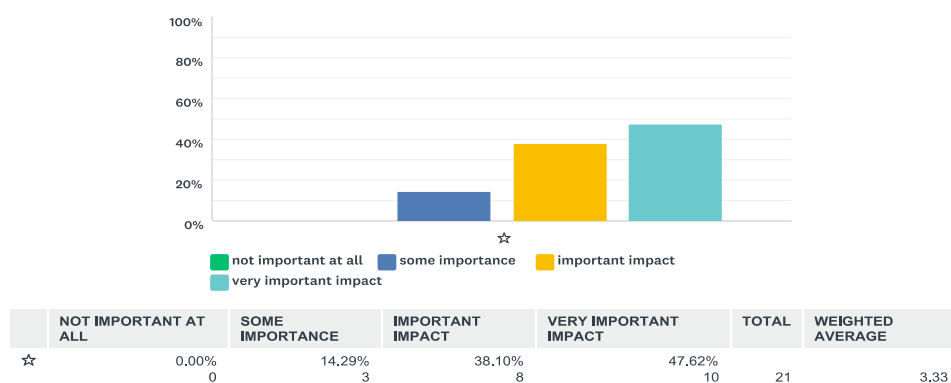
The answers have a different character and mostly not referring to impact: they refer in general terms to better awareness/reputation of ICS or biogas solutions, CO₂ reduction/reduction of environmental resources, and in specific terms to setting of national ICS quality standards, or national biomass strategies.

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Q25 Indicate the importance of that impact

Answered: 21 Skipped: 11



Q26: Indicate 2 most important transformational changes and / or national strategy changes

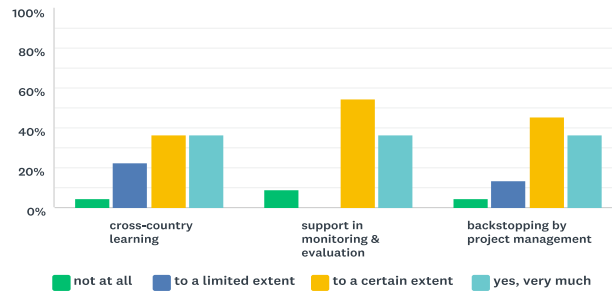
in your country due to EnDev activities

Answered: 21 Skipped: 11

Reference is mainly made to governmental prioritization of access technologies (ICS, biogas, solar PV), the establishment of quality standards, opening credit lines and sometimes market conditions for the same.

Q27 Assess to which extent specific characteristics of EnDev as a global program are an added value to your EnDev project.

Answered: 22 Skipped: 10



	NOT AT ALL	TO A LIMITED EXTENT	TO A CERTAIN EXTENT	YES, VERY MUCH	TOTAL	WEIGHTED AVERAGE
cross-country learning	4.55% 1	22.73% 5	36.36% 8	36.36% 8	22	2.05
support in monitoring & evaluation	9.09% 2	0.00% 0	54.55% 12	36.36% 8	22	2.18
backstopping by project management	4.55% 1	13.64% 3	45.45% 10	36.36% 8	22	2.14

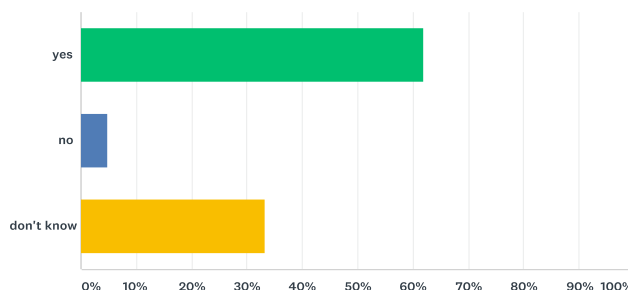
Q28: List maximally 3 weak points of the management setup of the OVERALL EnDev Program: indicate related to this listing what could be improved:

Answered: 21 Skipped: 11

Complaints are mainly uttered on EnDev's M&E, which is perceived as too complex. On the management is sometimes appreciation for assistance mentioned, but is also criticism given on the lack of clarity on responsibilities, or EnDev's approach to funds disbursement for country programs. Structural weaknesses were not brought forward.

Q29 Do you consider the identification of individual projects in your country appropriate (e.g. if you get requests from the field)?

Answered: 21 Skipped: 11



ANSWER CHOICES	RESPONSES
yes	61.90% 13
no	4.76% 1
don't know	33.33% 7
TOTAL	21

Q30: Does the local EnDev team in that sense have a “steering role” (on national level)? Please comment.

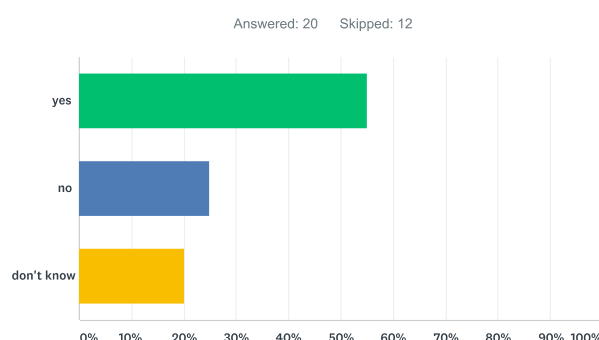
Answered: 18 Skipped: 14

In the identification mentioned under Q29, nearly all respondents that answered this question affirmative: mostly they were quite outspoken in this respect. They did not express doubts the steering role EnDev was playing. A few respondents did not share this view. Local ownership was not mentioned as an issue.

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Q31 Do you consider the selection process for upscaling of projects in your country appropriate?



ANSWER CHOICES	RESPONSES	
yes	55.00%	11
no	25.00%	5
don't know	20.00%	4
TOTAL		20

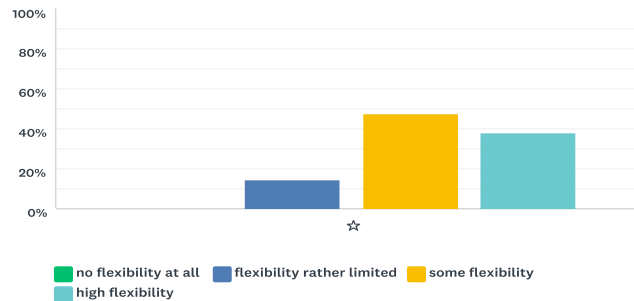
Q32: How do you assess your EnDev project’s exit strategy?

Answered: 22 Skipped: 10

Slightly more than half of the respondents were positive about their own idea of an exit strategy, but often hardly any further qualification was given. In some other cases exit conditions like the establishment of a financing structure or maturing of market structures (pico PV) were mentioned. Some considered exit strategies as complex. No one made reference to EnDev’s general exit criteria.

Q33 Can the program react to changes within the framework conditions of your country?

Answered: 21 Skipped: 11



	NO FLEXIBILITY AT ALL	FLEXIBILITY RATHER LIMITED	SOME FLEXIBILITY	HIGH FLEXIBILITY	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	14.29% 3	47.62% 10	38.10% 8	21	3.24

Conclusions on Important EnDev features

The importance of the national impact of pro-poor activities was seen as (very) important by 2/3 of the respondents. The fields and, in which these activities were carried out, as well as their character were differing considerably from each other.

EnDev as a global program had to a large extend added value to cross-country training, as to backstopping by project management, and more outspokenly to support in monitoring & evaluation. With respect to all 3 areas also criticism was brought forward on aspects like complexity, hierarchy, or usefulness. This criticism was case or incident oriented and not structural. The identification of project in EnDev countries was considered as appropriate, but about 1/3 of the respondents did not have a point of view on this matter. EnDev local teams often perceive their role as steering; ownership was not brought up as an issue. The selection process for upscaling was mostly seen as appropriate, but a considerable minority either did not share this qualification, or simply did not know. Some conditions for exit were formulated.

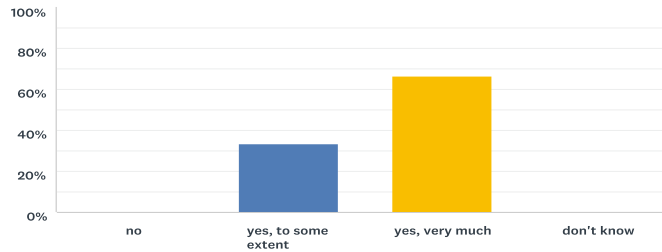
2.6 Monitoring & Evaluation EnDev's programme activities

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Q34 Are the data requested by EnDev appropriate to assess progress?

Answered: 21 Skipped: 11



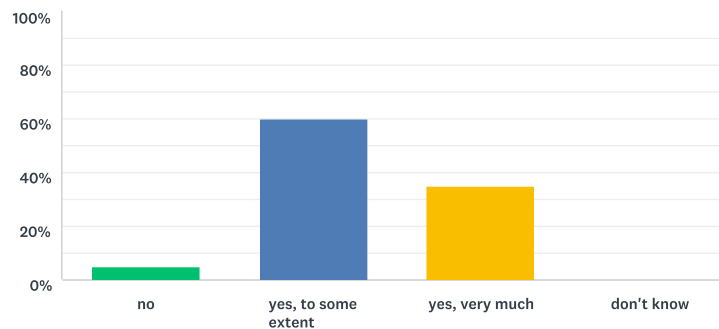
ANSWER CHOICES	RESPONSES
no	0.00% 0
yes, to some extent	33.33% 7
yes, very much	66.67% 14
don't know	0.00% 0
TOTAL	21

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Q35 Are these data also appropriate to steer decisions?

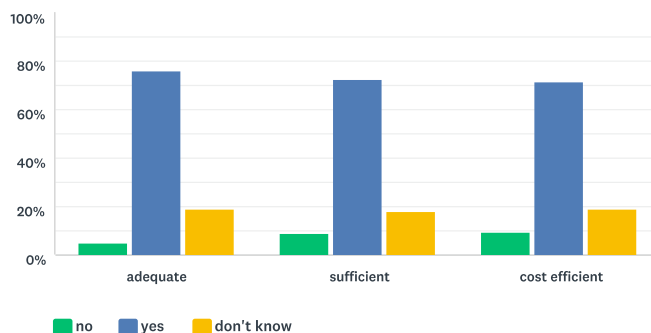
Answered: 20 Skipped: 12



ANSWER CHOICES	RESPONSES
no	5.00% 1
yes, to some extent	60.00% 12
yes, very much	35.00% 7
don't know	0.00% 0
TOTAL	20

Q36 Are the methodologies for counting and calculating the quantitative outcomes

Answered: 22 Skipped: 10



	NO	YES	DON'T KNOW	TOTAL	WEIGHTED AVERAGE
adequate	4.76% 1	76.19% 16	19.05% 4	21	1.14
sufficient	9.09% 2	72.73% 16	18.18% 4	22	1.09
cost efficient	9.52% 2	71.43% 15	19.05% 4	21	1.10

Q37: Describe possible improvements in your activities (maximum 3):

Answered: 20 Skipped: 12

In most of the cases suggestions (mostly not 3) were given on EnDev's programme features like: extension project selection, activity modifications, efficiency claim management/verification/disbursements, proportion incentive-management budgets, and the usefulness of international exchanges. Sometimes was referred to ICS and mini-grid related suggestions.

Q38: What are promising options for the EnDev Program as a whole? List maximum 3 promising options. (E.g. do more capacity building, provide more policy advice on sector level, facilitate more cross-country exchanges of experiences, have stronger focus on CO₂ reductions, on gender...)

Answered: 21 Skipped: 11

The respondents repeated options that were earlier proposed: more international exchanges, more capacity building, more resources for management, improve backstopping, or emphasize more policy advice at national level. The respondents did hardly provide arguments for the promising character of their proposed options.

Conclusions on the 6 Questions on the EnDev program

Most of the respondents gave a wide range of different suggestions, but these were stemming their own local realities with hardly any option that can be directly applied at EnDev's total programme level. This reflects the complexity of the entire EnDev programme, under which umbrella a wide range of national realities, an even wide range of implementation options, and a broad spectrum of donor policies work together. This comes also forward in many answers, where often clear positive answers are given, but not alone: often were additional considerations provided. All in all, answers do not suggest or propose

drastic changes in the way EnDev is envisaging its policies and the way these are carried out. Most answers expressed a pragmatic attitude, but a strong dedication to where the program stands for.

7.2. List of interview partners

Name	Organisation
Donor Agencies	
Ronald Goldberg	DGIS
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