

**Understanding the Transformational Impact of NAMAs
(Nationally Appropriate Mitigation Actions)**

By

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Abstract

The Nationally Appropriate Mitigation Actions (NAMAs) are a set of climate change policies and actions under the United Nations Framework Convention on Climate Change (UNFCCC). NAMAs, designed with a bottom-up approach through national processes, focus on active involvement of developing countries in climate change mitigation actions. One term, “transformational impact,” has been widely used as a key concept or metric of the NAMAs. However, this concept does not have one internationally agreed-upon definition, thus creating barriers especially for the NAMA funding process. Therefore, it is essential to examine how “transformational impact” is defined and to understand commonalities and variations in this definition across different organizations involved in the NAMA process. As a part of the Masters Project, interviews were conducted with people from 12 different organizations and the interview transcripts were qualitatively analyzed. The analysis suggests that interviewees believe that the NAMAs’ transformational impact should go beyond a project-centric approach to mitigation actions to include non-greenhouse gas benefits, such as broad national government projects. Each organization emphasized different themes in the interviews. The international organizations and institutions mainly focused on national ownership of the NAMAs, whereas funding agencies stressed the actual projects of developing countries. The results of this study suggest that the NAMAs should create a platform to facilitate communication about the NAMA process among different organizations.

Contents

I. Introduction

- A. History of the United Nations Framework Convention on Climate Change
- B. History of Climate Change Combatting Actions
- C. What are NAMAs?
- D. NAMA Structure
- E. Understanding Key Issues Surrounding NAMA
- F. How to Select Supported NAMAs
- G. How to Address NAMAs Benefit
- H. Pilot Study
- I. Research objectives and questions

II. Methodology

- A. Data Collection
- B. Qualitative Analysis

III. Results and Discussion

IV. Conclusion

V. References

1. Introduction

History of the United Nations Framework Convention on Climate Change (UNFCCC)

As climate change threatens human livelihood and development, various efforts have been made to resolve the issue. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) was adopted to address climate change at the global level. Since the UNFCCC was created, countries meet each year to negotiate climate change agreements. To tackle the challenges of climate change, the UNFCCC set a framework for international efforts toward greenhouse gas mitigation and countries that joined the framework committed to address climate change (UNFCCC, 2009). Countries participating into the framework are called the Parties and they are divided into three main groups: Annex I, Annex II, and non-Annex I nations. Annex I includes the members of the Organization for Economic Co-operation and Development (OECD), which is comprised of both industrialized countries and countries in the process of becoming industrialized. Annex II countries are non-OECD member countries. These countries need financial help to reduce greenhouse gas emissions. Non-Annex I is mostly comprised of developing countries that are considered vulnerable to climate change and its future economic and social impacts. Based on this classification, the UNFCCC has applied the principle of “common, but differentiated responsibilities” (UNFCCC, 2009).

History of Climate Change Combatting Actions

The UNFCCC created the international agreement, Kyoto Protocol, to combat the impacts of climate change by setting an internationally-binding target and committing the Parties to achieving the target. The Kyoto Protocol defined the ultimate goal of 5% reduction of GHG from 1990 levels during the 2008-2012 commitment period (UNFCCC, 2011). To promote the reduction process, three innovative mechanisms were adopted under the Kyoto Protocol, which

allow domestic and international market mechanisms to achieve the target of GHG reduction. The purpose of these mechanisms is largely driven by developed countries that recognize they (developed countries) are mainly responsible for the current GHG level, which resulted from their industrial activities (UNFCCC, n.d.a). Since developed countries are under a heavier burden than developing countries, it was necessary to lower the cost of achieving the target emission for developed countries, and this initiated three mechanisms under the Kyoto Protocol.

The three mechanisms of the Kyoto Protocol are Emission Trading (ET), Clean Development Mechanism (CDM), and Joint Implementation (JI). The ET allows countries exceeding the target to sell their carbon reduction credits to countries that need more carbon credits themselves. The CDM allows industrialized countries to deploy their emission-reduction technologies in developing countries, from which Certified Emission Reduction (CER) credits can be earned. CERs can be summed to reach the target emission reduction level. JI offers cost-efficient emission-reduction actions to Annex B countries committed to the Kyoto Protocol. Under this mechanism, the countries can earn Emission Reduction Units (ERUs) from their emission-reduction actions in another Annex B country and add them to meet their target, while the host countries benefit from foreign technology and investment (UNFCCC, n.d.b).

As the UNFCCC urged developed countries to undertake prompt actions to combat climate change, these mechanisms were adopted as a way to provide those countries with flexibility. For these reasons, the mechanisms are designed within the top-down approach. Under this situation, in which the mechanisms are driven by developed countries, it becomes essential to adopt the bottom-up approach to increase involvement of developing countries.

What Are NAMAs?

With increasing needs of getting developing countries involved with climate change

mitigation actions, Nationally Appropriate Mitigation Actions (NAMAs) first emerged in 2007 as part of the Bali Road Map under the UNFCCC. NAMAs are a set of policies and actions that developing countries undertake to reduce climate change impacts and enhance sustainable development through GHG emission reductions. NAMAs allow developing countries to propose climate change mitigation action plans and to contribute to domestic sustainable development and international GHG emission reduction (CCAP, n.d.). The purpose of NAMAs is to encourage developing countries to reduce their GHG emissions according to their respective capabilities and differentiated responsibilities. By getting more countries involved in climate change mitigation actions, NAMAs are expected to reduce GHG emission more effectively and result in sustainable development. Since NAMAs are linked to regulations, standards, programs, policies, and financial incentives (CCAP, n.d.), it is expected to bring sustainable development impact.

NAMAs Structure

The Cancun Agreements (2010) recognized two types of NAMAs: unilateral and supported. Unilateral NAMAs are developed by domestic resources, whereas supported NAMAs request international support in various forms, such as technology transfer, financing, or capacity building (UNFCCC, 2010b). Credited NAMAs have been discussed where tradable carbon credits are generated (Ecofys, 2012).

Understanding Key Issues Surrounding NAMAs

Even though NAMAs are promising instruments for combatting climate change, as well as enhancing international development, people involved in NAMAs have different understandings of its concept such as process and outcome, and, as a result, it is unclear how sustainable development objectives will be assessed against mitigation potential. This presents an enormous challenge in devising financing schemes to support NAMAs. Article 4.7 of the

Convention links sustainable development benefits through mitigation actions of developing countries with financial support of developed countries. However, this process has caused problems for the countries themselves with regard to understanding their roles in the process. In addition, barriers are created around the mechanism of providing financial support for NAMAs.

It is expected that NAMAs can go beyond project-based actions, and large numbers of funding agencies are willing to support and expand the scope of NAMAs. During the 2012 UNFCCC international climate change negotiations, significant progress was made in NAMAs, as the German and United Kingdom (UK) governments jointly launched the NAMA Facility with strong commitment to initially fund 70 million euros for promoting NAMAs in developing countries (ECN & Ecofys, 2013). The main goal of the Facility is to support developing countries that undertake actions to combat climate change impact and bring transformational impact out of those actions (NAMA Facility, 2013).

The NAMA Facility emphasizes transformational impact as an important underlying measure of NAMAs. However, this impact does not have a clear definition, and, accordingly, it creates confusion and conflicts between donor and recipient countries. As the transformational impact has been the key distinction between NAMAs and other supported mitigation actions, recipient and donor countries have been ambitiously trying to define and promote this impact. Because transformational impact will possibly trigger strategic and long-term actions, this impact plays a central role for NAMAs, especially when donors affirm funding commitments. However, as Ecofys (a leading consulting firm in energy and climate change policy) (2010) reported, different stakeholders involved in NAMAs have been grappling with several issues at this initial stage. These issues include how to select supported NAMAs and how to account for the impact on climate change for international cooperation (Ecofys, 2010). These barriers stem from the fact

that there is no explicit definition of transformational impact. As a consequence, the financing process becomes ambiguous, which hampers reliability, predictability, and scalability of the funding commitments.

How to Select Supported NAMAs

NAMAs rely on three types of financing sources. Unilateral NAMAs rely only on domestic funding, while supported NAMAs count on funding from various international sources (Ecofys, 2012). Since transformational impact plays an important role in an international financing scheme, I focus on supported NAMAs.

As the NAMA Facility announced the importance of catalyzing transformational impact and their will to carefully consider this impact (NAMA Facility, 2013), host countries seeking international funding have submitted NAMAs proposals ensuring long-term transformational impact. Moreover, a web-based NAMAs registry has been established to match proposed actions with international support, as the Cancun Agreements stated (UNFCCC, 2010). The concept and methods are not clearly defined, but the registry demonstrates a “learning-by-doing” approach to NAMAs development. As more NAMAs are included in the registry, a basic pool of knowledge will be created, and this will help participating countries to shape NAMAs more clearly (International Institution for Sustainable Development (IISD), 2013). Also, for NAMAs mechanisms to be practical, it is very important to develop a methodology based on internationally agreed-upon concepts and modules. This methodology will facilitate a process for host countries to exchange knowledge and experiences, as well as to devise future action plans (IISD, 2013). Furthermore, funders will be able to make more comprehensive decisions in the NAMAs selection process.

In addition to the NAMAs registry, there have been efforts by research and consultancy institutes to identify NAMAs opportunities. Ecofys established a NAMAs database to provide information to different stakeholders and NAMAs hosting countries seeking support to discover opportunities. Furthermore, the International Institution for Sustainable Development (IISD) published a practitioners' guide to develop financeable NAMAs, in which they presented their own methodologies for screening NAMA opportunity (IISD, 2013). They offer two types of methodologies for NAMA seeking support. One is for preparation and the other is for implementation.

Selecting a project and determining how to finance it are largely political decisions (Ecofys, 2010). A new platform should be created in which host and donor countries can communicate and seek optimal ways to satisfy the needs of both sides. Within this platform, host countries will see which NAMAs are funded and what kind of criteria are applied by donor countries, through which they will design their own NAMAs to address national circumstances. Most importantly, consistency in the definition of transformational impact should be achieved, because this otherwise intensifies discrepancies among the different organizations and makes it tough to create the optimum platform.

How to Address NAMAs Benefits

As climate finance is, ultimately, expected to account for NAMAs benefits for international cooperation, international financing demands measurable results which show that NAMAs achieve not only emission reduction, but also sustainable development. Demonstrating NAMAs impact with measurable, reportable, and verifiable (MRV) policies and measures such as how to enforce it and how stringent it should be, is essential.

Ecofys stated the importance of simplicity of the MRV results because it allows for freedom in recognizing the sustainable development benefits. In addition, in terms of stringency, supported NAMAs do not need to impose high stringency, as do credited NAMAs, but MRV results for GHG emission reduction need it because it is a stated purpose and tells whether the proposed actions are successfully implemented (Ecofys, 2010). In contrast, the Center for Clean Air Policy (CCAP) emphasizes MRV as a critical component of NAMAs and says accurate MRV is vital to enhance effectiveness of international financing. In an effort to enforce MRV, CCAP suggested sustainable development indicators to assess best metrics fitted in the national circumstance of each host country (CCAP, 2012). Thus, different methods have been suggested and the focus of NAMAs has not been determined. This calls for an investigation into what transformational impact means to each organization within the NAMAs process.

Pilot Study

I carried out a pilot study during the UNFCCC Intersessional in June, 2013. To determine how people define transformational impact, I conducted interviews with experts in different organizations. The interviewees were selected from international organizations, like the United Nations (UN), funding agencies, like the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and four host countries in South America. I selected the interviewees based on their priorities: international organizations adopt policies; funding agencies make monetary decisions; and host countries implement NAMAs that are financially supported by funding agencies and have policies that are governed by international organizations.

The pilot study raised the issue of disparities between perspectives on the NAMAs concept. Because there is no internationally agreed-upon definition for transformational impact, each interviewee's main focus varied. In addition, the results of the interviews revealed that

people use the phrase “sustainable development” interchangeably with “transformational impact.” Unless transformational impact is clearly defined and distinguished from other developmental impacts, inconsistency will be exacerbated. Interviewees described transformational impact in terms of how big it should be, how it was related to national context, what benefits people receive from it, and how long it should last, in other words, scale, context, benefit and timeframe. One interviewee recommended that representatives of institutions should be interviewed, since the institutions advise the decision makers. Based on the results of the pilot study, I interviewed representatives from three groups which are closely related in running the NAMA process from providing advice to making the decision: institution, international organization, and funding agency. These three groups have different priorities. International organizations are the groups working on introducing new policy and coordinating among the member countries over the international affairs. Institutions are the groups that advise on policy advising, based on their research. Funding agencies are the groups that provide the main funding sources for the NAMAs. Since the definition of transformational impact largely affects these three groups which have different responsibilities in the NAMA process, it is important to understand the variation and commonalities among these groups and determine the causes of complications in the NAMA process, especially the funding mechanism.

Research Objectives and Questions

I examined whether the concept of transformational impact was interpreted in different ways by experts across organizational affiliations. I expected to find variations and commonalities in perspectives among different organizations, based on the results of interviews with their representatives about transformational impact. Interviewees were selected based on the results of the pilot study during the UNFCCC Intersessional, which took a place in the summer

of 2013 in Bonn, Germany. The results of the pilot study indicated that researchers should investigate the organizations working closely in operating the NAMA process rather than broadly focus on the three main groups of donors, policy makers, and recipients. Based on those pilot study results, for this study, I selected the interviewees from three closely-associated groups, including international organizations, funding agencies, and institutions. These three groups are connected within the NAMA financing process. Institutions advise funding agencies and international organizations based on the research results. Funding agencies control money and make funding decisions, and international organizations promote the process by introducing policies and actions. Therefore, I compared interview results across these selected groups.

I present information in three major sections. The first section gives the definition of transformational impact. The second section focuses on the differences between transformational impact and sustainable development. Finally, the third section gives the criteria of transformational impact created by different organizations. In the future, this research is expected to be helpful in creating the platform on which both host and donor countries could obtain necessary information.

2.0 Methodology

Data Collection

I interviewed people from three different types of groups, including international organizations, research and consulting institutions, and funding agencies. Table 1 shows organization pseudonyms and the code for each organization.

Table 1. Description of interviewees by pseudonym.

Group category	Organization pseudonym	Code
International Organization	International Organization-1	IO-1
	International Organization-2	IO-2
Institution	Institution-1	IT-1
	Institution-2	IT-2
	Institution-2	IT-3
	Institution-2	IT-4
	Institution-2	IT-5
Funding Agency	Funding Agency-1	FA-1
	Funding Agency-2	FA-2
	Funding Agency-3	FA-3
	Funding Agency-4	FA-4
	Funding Agency-5	FA-5

The interview questionnaires contained two questions about study participants' individual perspectives regarding the definition of transformational impact and the difference between transformational impact and sustainable development. I asked interviewees to share their own perspectives about each question and to provide me with any related studies that had been conducted in their organizations. In addition, I asked how they differentiated sustainable

development from transformational impact, since the results of the pilot study for this research indicated that people use these two phrases interchangeably. At the end, I asked their expectations and for suggestions on how to enhance transformational impact in the NAMA process.

Regarding the interview method, I first emailed potential interviewees to ask about their availability to participate in the study and ask about their preference regarding the interview method used, including Skype, landline call, and email.

Qualitative Analysis

I used the qualitative analysis software, NVivo, to analyze the data obtained from the interviews with participants. The questionnaires were primarily exploratory in nature and aimed to reveal individual unprompted knowledge and beliefs with open-ended questions. Therefore, qualitative analysis was the most appropriate method of analyzing these data.

At first, I sought to understand the general idea of transformational impact, based on the analysis of the interview transcripts in terms of the four different components determined by the pilot study: scale, national context, benefit and timeframe. I applied two types of NVivo queries: word frequency and text search. The purpose of the word frequency query was to show the most frequently occurring words in the source, so that I could understand the implicit theme by grouping those words into larger concepts (QSR international, n.d.). Moreover, this query helped me to gain a clear understanding of variation and commonalities among three groups. Then I ran the text search query, the purpose of which was to find all occurrences of a particular word, phrase, or concept. Since people use the phrases “sustainable development” and “transformational impact” interchangeably, it was necessary to analyze different usages of those two phrases in the appropriate context (QSR international, n.d.).

3.0 Results and Discussion

The results of the interviews offered valuable insights into the commonalities and variations across the different types of groups regarding the concept of transformational impact and its comparison to sustainable development. I interviewed 12 people, two of whom were from international organizations, five of whom were from funding agencies, and five of whom were from international institutions. In terms of the interview method, five participants were interviewed via landline phone call, five were interviewed via Skype, and two were interviewed via email. Interviews took between 30 and 40 minutes on average.

All of the interviewees mentioned importance of discovering the meaning of transformational impact, since the lack of a definition of this key term resulted in people having different understandings about the NAMAs concept. Overall, people stated that transformational impact was to transform the manner of achieving the goal. The followings are example responses coded by organization:

- “You don’t want to change what you are doing but you do want to change the way you are doing” (IO-1).
- “Invented technology completely changes the way people communicate” (FA-2).
- “Transform yourself, your behaviors, you have to give up a little bit of your comfort in order to achieve sustainability” (IO-1).

Based on this broadly agreed upon idea about the concept of transformational impact, I delved further into the impact of the four different aspects: scale, national context, benefit, and time frame.

Scale

For the scale, it was discovered that people usually compare NAMAs to CDM, when they explain the scale of transformational impact. Unlike the CDM, which focuses on a project and its efficiency in reducing GHG, the NAMAs are program-based and concentrate on bringing developmental impacts which boost national development, as well as enhance GHG emission reduction. The followings are example responses coded by organization:

- "...the scale needs to be quite large" (FA-1).
- "NAMAs are much bigger scale. Instead of talking about one big gas plant, you are talking about energy sector as a whole or something that happens on national scale or at least regional scale, and it typically involves into sectoral level" (IT-1).
- "...there are opportunities are really moving beyond that model into broader policy program in country sector and by focusing on much broader scale" (IT-5).

National Context

The next component which I investigated was national context. Regarding this issue, interviewees all agreed that NAMAs should have a significant impact on developing countries and that, in each case, the individual country's best interests should be prioritized because that minimizes developing countries' dependence and maximizes their potential. The followings are example responses coded by organization:

- "...doing NAMAs exercise allows countries to figure out what are the things I can do that are actually going to lower emission and that work for me" (IT-1).
- "...embedded in the national context of development of climate change plan of countries something that help to achieve transformation" (IT-5).
- "...the outcome of transformational impact is dependent context" (FA-5).
- "...long lasting sustainable impact that leads to sustainable national policy" (IT-3).

Since it is closely related to the national context, especially to the national policy, one interviewee mentioned that it is possible that a lot of existing ideas, projects, and policies were going to end up getting packaged as NAMAs.

Benefits

Regarding the benefits, it was stated that benefits of the NAMAs include most of the developmental impact across sectors or regions, as well as GHG emission reduction benefits. NAMAs were expected to bring both GHG and Non-GHG benefits. The followings are example responses coded by organization:

- “It wouldn’t be just emission being lowered, it should offer some benefits in positive way to country” (IT-1).
- “...so you want to have as much concrete development benefit” (FA-1).
- “...things such as employment, contribution to economic activities, health benefits, air pollution all these things have to do with NAMAs...these benefits are what are being pursued primarily, and then CO2 reduction become some sort of co-benefit” (IO-1).
- “Non-GHG benefits, health, environmental benefits all economics benefits, all these together transforming the sectors, achieving GHG benefits as well as development, environmental impact has a lot to do with transformational impacts” (IT-5).

One of the most frequently mentioned examples was the Mexican housing NAMAs, which was a pilot project that was conducted before the actual NAMAs was implemented. This was a good example of a sustainable housing sector in Mexico which supports for advanced implementation, higher energy efficiency, and energy efficiency measures in new building properties in Mexico. Since the Mexican government was concerned about potentially low

energy efficiency in building properties, they set up NAMAs projects to raise the level in new properties. In implementing these NAMAs projects, transformational impact, as a form of a benefit, was required to achieve the goal. For example, they were raising the price and requiring a higher energy efficiency level, from which I could see transformational impact. Furthermore, it was expected that Mexico would be able to keep doing this without external support because they learned from the change. Being independent from external support is also one of the benefits achieved through transformational impact.

Time Frame

The last component investigated was timeframe. All interviewees agreed that transformational impact through the NAMAs would be measured on a long-term scale. According to participants, transformational impact does not focus on one five year-long project, but instead, it connects a number of other actions that are being extended over time creating long-term impact. The followings are example responses coded by organization:

- “Deep impact and deep transformational impact are achieved in entire sector in long term” (IT-2).
- “Existing actions, replicating existing actions are doing long- term planning” (FA-1).
- “Transformational is certainly actions to look for long term impact” (IT-5).

The general justification behind this statement was that since the NAMAs transform systems continuously, the impact is sustainable and will last for a long time.

Query Wizard

NVivo included Query Wizard, which allowed me to run various types of queries to analyze the data by discovering the patterns of specific words or phrases. Based on the previous findings, I delved into the differences in the definition of transformational impact across the

groups. With the word frequency query, I identified the six most-frequently-used words in each group and then compared these words across the groups to find variations and commonalities. After that, the answer to the key question of whether or not sustainable development and transformational impact were different was analyzed by text search query. Since the text search query allowed me to find patterns and see where those particular words were used, I could obtain comprehensive idea about how people differentiate transformational impact from sustainable development through the NAMAs.

Word Frequency

Based on the idea that people tend to use the words more frequently when they think they are important, I ran the word frequency wizard to find out which words were most frequently used across the different groups. I grouped words with the same stem and synonyms together, while conjunctions and transitional words were ignored.

The word “countries” was one of the top-ranked most-frequently-used words by representatives of international organizations and institutions. This word was coupled with words such as “national,” “land,” “area,” and “state” and these words were used to emphasize national ownership, as can be seen from the following example responses coded by organization:

- “We are talking about...developing country...having broader transformation in their economy” (IO-1)
- “...very important part of that is country ownership...in the national context of development of climate change plan of countries, something that help to achieve transformation” (IT-5).

For international organizations and institutions, it was considered important to eventually increase national sovereignty from transformational impact. They stated importance of

transformation of national economy and wide national ownership starting from capacity development.

In addition, representatives of international organizations used the word “think” most frequently. This word refers to considering, believing, meaning, and reasoning in a context emphasizing host countries’ own power and freewill to think, which would serve as a stepping stone for development. The followings are example responses coded by organization:

- “...use NAMAs as figures or as a means to adopt policy, for example, if it acquire locals, these NAMAs are more likely transformative...” (IO-1).
- “...looking at different steps to get you there and...thinking about pre-condition either as well” (IO-2).
- “...need to think about what needs to be overcome for enabling environment as well as your NAMAs projects” (IO-2).

When it comes to the word “change,” interesting results were found. Representatives of international organizations and institutions used this word with words such as “policy,” “mental,” “behavioral,” “legislative,” and “structural,” whereas representatives from funding agencies used it with words such as “development,” “system,” “innovation,” “length,” and “depth.” The followings are example responses coded by organization:

- “What this waste sector NAMAs does it try to do is to basically change that scenario that most of the wastes in Colombia goes to landfill...” (IT-5).
- “...transformational are not talking about just implementation we are talking about change the regulations and policies in countries” (IT-5).
- “...you do want to change the way you are doing” (IO-1).

In comparison, representatives of funding agencies used the word “change” when it was combined with words such as “investment,” “innovation,” and the time length. The followings are example responses coded by organization:

- “...unlock the change. investment independent on external developed country’s support” (FA-5).
- “.... So, actually, the question of what the transformational impact is how to get to that tipping point, how to get there...there are couple of sectors which lead societies to the tipping points in the society of development. One factor...the change agent usually are certain innovators making innovations, certain connectors sort of linking these actors and spreading news in order that critical actors to take up these innovations” (FA-2).

Moreover, comparing the two least used words of representatives of institutions and funding agencies, I observed that the institutions’ representatives emphasized the importance of a sector-wise approach, while the funding agencies’ representatives showed a high expectancy of energy efficiency increase. One interviewee from a research institution stated that NAMAs should be sector-wide and broader than specific projects. On the other hand, representatives from funding agencies gave examples of transformational impact: improving energy efficiency, finalization of energy efficiency strategy, development of energy efficiency target monitoring, and implementation of the industrial energy efficiency project. Furthermore, they emphasized the formulation of a master plan to promote energy efficiency.

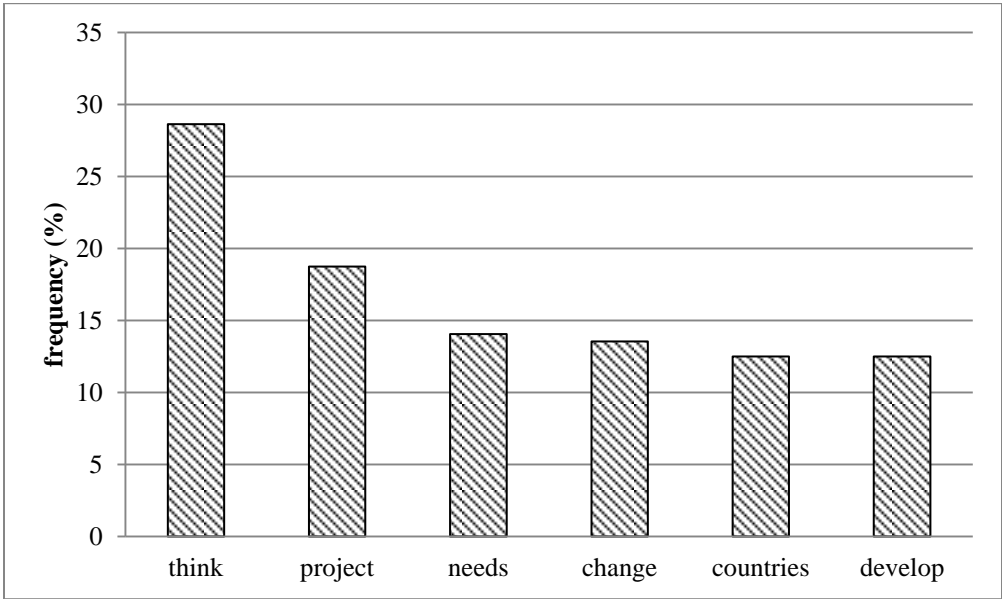


Figure 1. Top six most frequently used words by International Organizations.

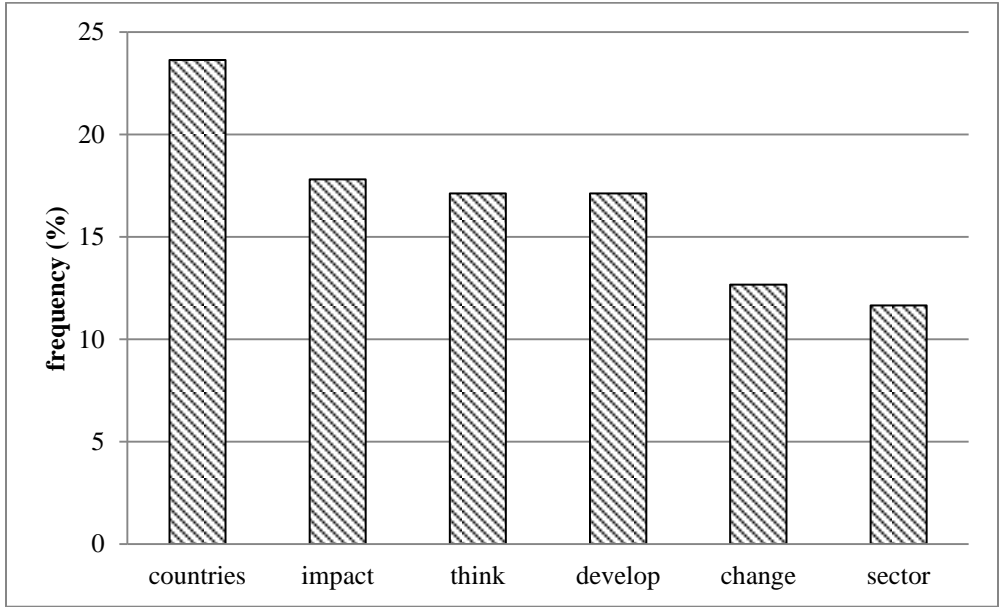


Figure 2. Top six most frequently used words by Institutions.

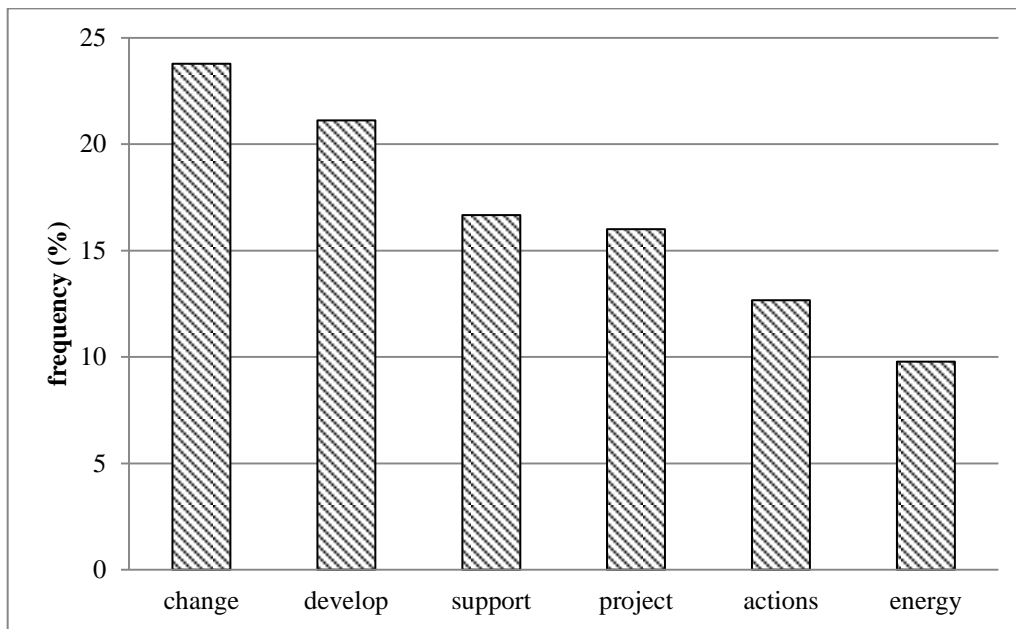


Figure 3. Top six most frequently used words by Funding Agencies.

Text search query

During the interviews, I observed that most interviewees used the phrase “sustainable development” interchangeably with the phrase “transformational impact.” Therefore, I asked the interviewees about the differences between those phrases, and then analyzed the responses via the NVivo text query.

A text search query finds where particular words or phrases occur within the document. Using this query, I found all instances of the phrases “sustainable development” and “transformational impact.”

Most of the interviewees stated that transformational impact did not necessarily mean sustainable development, but sustainable development was a part of transformational impact. For example, sustainable development would set a specific goal of two degrees of temperature

increase, while transformational impact was concerned with a broader concept, such as transformation of all related systems. Furthermore, it was normally considered that sustainable development constructed the goal of transformational impact, which runs through the overall process.

One interviewee stated that there was no official or written material on the differences between sustainable development and transformational impact, but that the two concepts needed to be differentiated from each other. It was stated that sustainable development was more about the quality and direction of the impact, while transformational impact was more about the magnitude and depth of the impact. In addition, the relationship between them was explained as follows:

- “You may have positive impacts on sustainable development that are not necessary transformational, and also the other way around” (IO-1).

In addition, interviewees introduced the idea of differentiating sustainable development and transformational impact by whether or not financial aid is needed. Transformational impact was considered to be the one that is maintained in the longer term without the need for aid financing. In other words, the independence from finance is an important element of being transformational.

In addition, the scale of the context was raised as the way of measuring transformational impact. It was observed that the scale of the context decided whether or not it was transformational. It was said that the sustainable development impact benefited one or more specific themes, whereas transformational impact carried out sector-wise reforms, which resulted in various impacts beyond the ones defined. One interviewee provided me with a good example, which is described in Figure 4, in which a diesel generator is replaced by a wind-powered

generator.

The wind energy project that delivered electricity to rural communities might help replace diesel generators and biomass energy and, thereby, lower emissions. It would also require people to spend less on fuel, decrease deforestation, and improve air quality, which were referred to as “sustainable development,” but if the intervention was not done at a sufficient scale to affect the country's energy sector as a whole and/or if it didn't spur further development of renewable energy in the country, then it was not “transformational.”

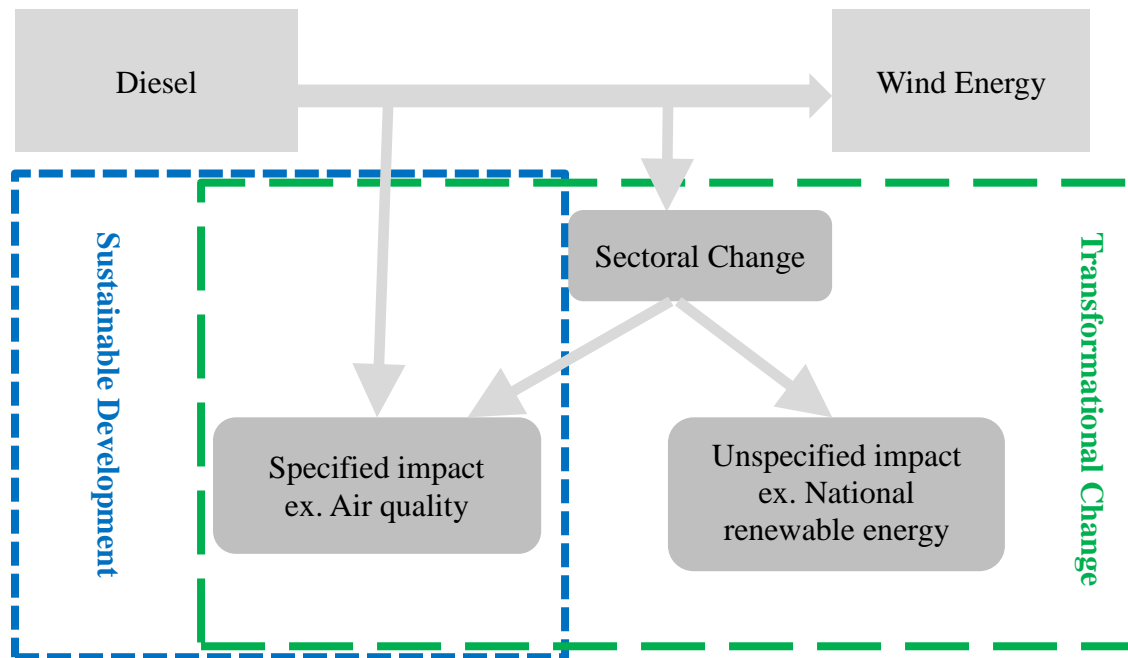


Figure 4. Comparison between transformational impact and sustainable development.

Based on the analysis of the interview answers, the differences between “transformational impact” and “sustainable development” were explained in terms of five components: scale, characteristic, relationship, financing, and MRV. As seen in Table 2, it was broadly agreed that

“sustainable development” could be referred to as “transformational impact,” whereas the other way around was not always agreed upon.

Table 2. Difference between transformational impact and sustainable development, as expressed by interviewees.

Scale	Sustainable development can define a goal dimension of transformational impact . Sustainable development is not necessarily identical
Characteristic	There isn't any official or written material on this but I do differentiate both. Sustainable development impacts talks more about the quality and direction of the impact (toward positive and in line with some criteria). Transformational impact is more about the magnitude and "depth" of the impact.
Relationship	You may have positive impacts on sustainable development that are not necessary transformational , and also the other way around.
	Sustainable Development can be transformational , but transformational impact doesn't necessarily. If you use sustainable development in a wider context, it would be transformational .
	Transformational doesn't always have to be sustainable .
	this kind of sustainable development (democratic transition) can transform a system while non- sustainable developments (transition to a dictatorship)
Financing	I think the engagement (or independence from) finance is an important element of transformational -ness. For me sustainable development has a clearer people focus, and is less about finance and interventions, more about the whole development process.
MRV	I think sustainable development impact means that there is a measurable positive impact across one or a number of sub-themes, such as affected people's livelihoods, climate change adaptation/resilience, and environmental variables such as rate of deforestation, levels of air pollution, soil fertility, level of eutrophication, etc. Transformational impact , on the other hand, captures the degree to which the sector's current situation and/or development path is altered as a result of the NAMA.

To help with understanding of the difference in scale, one interviewee stated that NAMAs aiming at transformational impacts in the context of transformation to a low-emission development should evaluate if it resulted in achieving the goal of sustainable development, which might be 2°C target and poverty eradication, for example.

In terms of the characteristic, their slight difference in the way to approach was mentioned. Compared to the sustainable development, which was engaged with quality and direction of the impact, transformational impact reaches toward the magnitude and depth of the impact.

Most importantly, the interviewees agreed on the needs of differentiating transformational impact from sustainable development and most stated that sustainable development could be transformational, while transformational did not always have to be sustainable. Interestingly, these two words put different amounts of significance on financing. Since transformational impact in financing implies that they become less dependent on external financing, it gives great importance on financing, while sustainable development does not, because it focuses on whole development more than the financing.

4.0 Conclusion

As the NAMA Facility emphasizes maximizing transformational impact (NAMA Facility, 2013), other donors also have, gradually, focused on the meaning of the transformational impact (ECN & Ecofys, 2013). Moreover, some initiatives, like the NAMA Partnership, have been working on establishing a clear standard of the transformational NAMAs (ECN & Ecofys, 2013). To initiate transformational impact, it is important to have a clear definition of the concept to promote transformational impact. Therefore, the current study investigating the concept of transformational impact is meaningful.

There have been meetings and forums held by donors, bilateral/ multilateral organizations, international organizations, and institutions to establish criteria or indicators to address transformational impact through NAMAs. The proposed language defining transformational impact differs in accordance with the purpose of each organization. Table 3 shows the slightly different approach in defining and measuring transformational impact.

As seen in Table 3, UNEP offers an integrated explanation of sustainable development and transformational impact (UNEP, 2013), whereas the NAMA Facility distinguishes transformational impact as separate from sustainable development (NAMA Facility, 2013). Since sustainable development impact is closely related to transformational impact (OlsenKaren, 2013), identifying these two impacts will offer a structured way to assess both impacts. The KfW, which channels the funds of the NAMA Facility as a technical support unit, proposes broad criteria as requirements for financing (KfW, n.d.). It is evident that organizations related to the NAMA process have varied perspectives and approaches to transformational impact.

Table 3. Assessment of transformational impact by different organizations.

Org.	Criterion	Explanation
UNEP	Sustainable and transformational impacts	<ul style="list-style-type: none"> - “NAMAs should result in a long-term, permanent transformation of a sector towards a lower greenhouse gas emissions pathway.” - “To secure long-term transformation, NAMA design should ensure sustainability of impacts beyond the implementation period.” - “A NAMA is one way to transition rapidly to an efficient lighting market, yielding continuous gains in energy efficiency, economic savings and emissions reductions.”¹
NAMA facility	Potential for transformational impact	<ul style="list-style-type: none"> - “Is the outlined NAMA Support Project element of a broader programme or policy framework, which contributes to achieve a higher level sectoral or national emission reduction target or implement a low emission development strategy? Would the achievement of the higher level emission reduction target or implementation of the low emission development strategies imply transformational change?” - “Does the outlined NAMA Support Project fit into a broader context of mitigation activities in the respective sector?” - “Does the outlined NAMA Support Project contribute to change the prevailing structures of the sector? Does the NAMA Support Project help to over-come systemic barriers to the reduction of emissions?” - “Does the outlined NAMA Support Project develop capacities to reduce future GHG emissions beyond the scope of the project?” - “Is the outlined NAMA Support Project replicable with respect to its applicability in other regions, countries and internationally?” - “Is the outlined NAMA Support Project implemented as far as possible strengthening national systems as for example described for the aid effectiveness criteria of the OECD/DAC?” - “Does the outlined NAMA Support Project use an innovative approach for the reduction of emissions, which can have impacts beyond the specific NAMA Support Project (e.g. technology transfer; general support approach)?” - “Does the outlined NAMA Support Project foresee the participation and/or development of the private sector?”²
KfW	highly ambitious and transformational climate projects	<ul style="list-style-type: none"> - “A high level of ambition in terms of the GHG-reduction potential and transformative impacts in favour of a low-carbon development path.” - “High national interest and ownership in the national government beyond the borders of single ministries.” - “An adequate and cost-effective MRV system to provide for indicators, baselines and milestones to support transparency in effectiveness and use of funds.” - “The maturity and bankability of a NAMA concept to be financially viable and sustainable.”³

¹ UNEP. (2013). “Guidebook for the Development of a Nationally Appropriate Mitigation Action on Efficient Lighting.”

² NAMA facility. (2013). International NAMA facility; General Information Documents.

³ KfW. (n.d.). “Promotion of low-carbon transformation”. NAMA-National Appropriate Mitigation Action: <https://www.kfw-entwicklungsbank.de/International-financing/KfW-Entwicklungsbank/Environment-and-climate/F%C3%B6rderinstrumente/NAMA-National-Appropriate-Mitigation-Action/>

It is certainly valid to compare perspectives among three different groups: international organizations, institutions, and funding agencies. However, this study is faced with difficulties when applying the results to the NAMA process, because it considers aspects only from organizations with an international scope. When it comes to the national level, the purpose and mission of NAMAs will be slightly different, because national interest will help determine the direction of NAMAs. Thus, transformational impact will have different meanings for national level organizations or government than for international organizations. Therefore, it is necessary to investigate different perspectives of countries participating in NAMAs.

This study could be expanded and provide practical suggestions by interviewing NAMA host and donor countries. Especially, the host country is a key element in the NAMA process. Since NAMAs are designed with a bottom-up approach which emphasizes participation of developing countries as NAMA host countries, it is essential to know how host countries define transformational impact and what they are expecting from the transformational impact. Without understanding host countries' perspectives, donor and host countries can neither initiate communication nor continuously carry out NAMAs. In addition, it is very important to comprehend host countries' viewpoints toward transformational impact and understand differences in ideas between donor and host countries, because that allows us to eliminate barriers and facilitate communication between them. The more ideas and concerns are expressed by various players, a more effective approach can be designed. Moreover, this will strengthen connections among different countries and organizations by embracing differences and integrating them into the NAMA process. Based on this further study, researchers will be able to develop a platform whereby various organizations exchange ideas about transformational impact and each distinct perspective are incorporated into the structure of the NAMAs process.

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