Research topic

Assessment of the readiness gaps and barriers for the Georgia's NDC (Nationally Determined Contributions) implementation process

Policy Research for Sustainable Growth

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08.08.2016

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LIST OF ACRONYMS

AA	Association Agreement
CCO	Climate Change Office
CoM	Covenant of Mayors
COP	Conference of Parties
EU	European Union
GHG	Greenhouse gas
GoG	Government of Georgia
ICCC	Inter-Ministerial Committee on Climate Change
INDC	Intended Nationally Determined Contribution
IOR	Inter-Organisational Relations
LEDS	Low Emission Development Strategy
MA	Mitigation Actions
MoENRP	Ministry of Environment and Natural Resources Protection
MoU	Memorandum of Understanding
M&R	Monitoring and Reporting
NAMA	Nationally Appropriate Mitigation Action
NEEAP	National Energy Efficiency Action Plan
OD	Organizational Development
OECD	The Organisation for Economic Co-operation and Development
SEAP	Sustainable Energy Action Plan
UNFCCC	United Nations Framework on Climate Change
WG	Working Group

1 BACKGROUND

1.1 Origin

The United Nations Framework Convention on Climate Change (UNFCCC), the parent treaty of the 1997 Kyoto Protocol, has 197 Parties (Nuttall, 2014). The Kyoto Protocol has been ratified by 192 (UNFCCC, 2014)of the UNFCCC Parties, including Georgia. For the first commitment period of the Kyoto Protocol, 37 States, consisting of highly industrialized countries and countries undergoing the process of transition to a market economy, have legally binding emission limitation and reduction commitments. In Doha in 2012, the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol adopted an amendment to the Kyoto Protocol, which establishes the second commitment period under the Protocol (UNFCCC, 2014). At the 2015 United Nations international climate change conference in Paris (COP21), 195 countries agreed to limit global warming to well below 2°C and pursue efforts to limit it to 1.5°C. In advance, the participating countries submitted plans to reduce their greenhouse gas emissions – the Intended Nationally Determined Contributions (INDCs). Every five years these plans will be updated with the first update due in 2018. The ultimate objective of both treaties is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system.

1.2 Contributions by Parties to attain the UNFCCC emission reduction goals

The world practice demonstrates that submitted INDCs are strongly allied to national mitigation actions (MAs) and strategies. In most cases, the technical process related to the MAs development was mostly matched with existing structures and processes. Moreover, the mostly used institutional setup created environment for involvement of stakeholders at the technical level of key different government entities, for instance in many countries, this level was participated in preparation of Low Emission Development Strategies (LEDS), Nationally Appropriate Mitigation Actions (NAMAs), National Energy Efficiency Action Plans (NEEAPs) or other climate planning activities (Clapp, et al., 2010).

On the other hand the political process around climate change was unexperienced field of activity for many countries. In spite of technical support received from international donors and agencies, in many countries political attention to the climate related processes was a new phenomenon and Georgia was not an exaptation. Only several countries have represented institutional structures including political level reaching beyond the ministries in order to facilitate climate change mitigation policy development. F. Roeser concludes that in most cases, the high level political stakeholders' involvement in the climate policies is related to the establishment of new processes and setting up of communicating lines (Roeser, et al., 2016). Simultaneously, taking on board many high level political decision makers with a limited knowledge on climate change triggers the additional work in order to understand technical information and data. This step is necessary for linking climate priorities with the wider political framework with the aim of the balancing of potentially competing political outlines (Kurdziel, et al., 2016).

1.3 LEDS

In 2008 at the COP 14 under the United Nations Framework Convention on Climate Change (UNFCCC) held in Poznan, Poland, the term low emission development strategies (LEDS) first emerged. The ambiguity related to its possible role in a future framework facilitated the debates across climate society. The absence of officially agreed definition has contributed to develop general approach towards LEDS. It is a domestic strategy paper that "describe forward-looking national economic development plans or strategies that encompass low-emission and/or climate-resilient economic growth" (Clapp, et al., 2010). LEDS primary objective is to help advance national climate change and development policy in a more coordinated, coherent and strategic manner. Moreover, it can serve multiple purposes in various sectors.

LEDS have been precisely stated in negotiating texts from COP 15 and beyond. The Copenhagen Accord which includes the proposal from Georgia and following COP decisions recognised that a LEDS is crucial to sustainable development (Clapp, et al., 2010).

"A LEDS can provide value-added to the countless of existing climate change and development related strategies and reports that already exist by providing integrated economic development and climate change planning. A LEDS may serve a range of domestic purposes for government, the private sector and the general public as well as other institutions and stakeholders. For example, the process of establishing a LEDS can enhance co-ordination across different ministries, improve communication with other stakeholder groups such as businesses and civil society, and increase public awareness of climate change science and policy. A LEDS can help guide the diversification of an economy (e.g. away from fossil-fuels). Clarification on economic development and climate change priorities can in turn help provide early signals to the private sector for possible directions for investment, research and development" (Clapp, et al., 2010).

The LEDS can play a significant role in battling against climate change global phenomena. It can synergise human-beings effort at a national level in order to address international challenges. For example, LEDS can demonstrate linkages between mitigation measures and GHG emissions trajectories. Also, information on accumulative effect of LEDSs from various countries can support in assessment of anticipated overall trend in climate change mitigation field.

LEDS has a potential to develop well-elaborated pathway for donor aid, by demonstrating existing barriers and emphasizing priority measures. In most cases, the financing for climate change programmes also benefits to other sustainable development goals, such as energy efficiency, water management, forest conservation etc. LEDS can reduce the risk of fragmenting support received from multi- and bi-lateral sources. This strategy has an opportunity to support matchmaking process among economic and social development priorities with environmental concerns (Clapp, et al., 2010).

By taking into account the above mentioned potential of LEDS, it can facilitate the implementation of nationally appropriate mitigation actions (NAMAs). In order to receive this kind of benefits from LEDS countries should consider the synergy possibility between the strategy and NAMA, where the last one would play a strategy measure role. For surely, the development of a LEDS won't be a precondition for financial aid. In the literature, the LEDS is considered as an enabling exercise that in case of linking with NAMAs can help prioritise them.

In OECD studies Clapp develops the other synergy possibilities for LEDS with various national strategies and programmes, which can be considered as irrelevant depending on the national circumstances and quality of these documents. "Countries should carefully consider how LEDS fit with other existing planning tools and strategies to minimise the risk of additional burden and overlapping or conflicting strategies. LEDS can integrate, and build on, existing strategies including national sustainable development strategies, national climate change strategies and technology needs assessments. It is also important to consider how information contained in a LEDS (e.g. policy priorities, funding and capacity needs) could be communicated to the international community. This could involve making LEDS publically available or voluntarily including some elements of a LEDS in a National Communication" (Clapp, et al., 2010) and BUR.

1.4 NAMAs

The origin of the concept in the Bali Action Plan from 2007 (Coetzee & Winkler, 2014), where NAMAs were introduced as a means for developing countries to indicate the mitigation actions that they were prepared to take as part of their contribution to a global effort, creates possibility to fulfil the INDC goals

through using this mechanism. Subsequently, and especially following the Copenhagen COP in 2009, the NAMA concept has evolved, and became used as a way for developing countries to describe a specific yet voluntary mitigation action, often linked to the provision of international support. The proposal of Georgia attached to the annex of the Copenhagen Accord represents country's vague vision with regards to the new concept of NAMA. The more pragmatic approach for the negotiators in the run up to Paris was to use general language that served the needs of the Agreement, was consistent with the level of detail required, and which is applicable to both developed and developing countries (Hinostroza, et al., 2014).

The question with regards to NAMAs after the adoption of the Paris Agreement in late 2015 is how they fit in the new international climate landscape. The first observation to make is that the Paris Agreement does not mention NAMAs by name, neither in the Decision, nor in the Agreement itself. This may seem a striking absence, given the growing prominence of the NAMA concept in the mitigation approaches being put in place by developing countries in the lead up to COP21. NAMAs took centre stage in a number of events at the COP itself, for example at the UNFCCC NAMA Fair. Despite this, there is no mention of the term NAMA in the final agreement. This has understandably led to some confusion and uncertainty among developing countries and NAMA practitioners who have put considerable effort and trust into the development of the concept and its application (Ellis, et al., 2009).

At some point, The Paris Agreement is principally about ambition, intentions, objectives, and high-level national contributions. It does not go into detail of different aspects such as implementation, transparency, or finance. It is widely understood that this will follow in the next few years. So it can be argued that there was no need to refer to a specific concept like the NAMA (Hinostroza, et al., 2014).

Thus, the Agreement states, in Article 4.2, that "Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such [nationally determined] contributions". When considering the 'domestic mitigation measures' that they can pursue to achieve their NDC goals, many developing countries and other actors involved in the process will naturally see that this is where NAMAs fit in, following the widely understood nature of NAMAs today as specific mitigation actions. In addition, throughout both the Decision and the Agreement there are many references to the importance of sustainable development priorities and national circumstances, concerns that are well aligned with the 'nationally appropriate' element of NAMAs (Van Tilburg, et al., 2011).

NAMAs are a key implementation vehicle for achieving targets formulated in the NDCs. Indeed, the Agreement describes the conditions and attributes of those mitigation actions in a way that makes them sound very much like NAMAs. The following sections of this chapter therefore explore the role of NAMAs in implementing the Paris Agreement, and look at how they can evolve to play that role most effectively (Holm Olsen, 2014).

Following the introduction of INDCs (at the 2013 Warsaw COP19, and later intensified after the 2015 Paris COP21 agreement) NAMAs are expected to contribute to attaining INDC emission reduction targets (Hinostroza, et al., 2014).

1.5 NDCs

At the heart of the Paris Agreement are the NDCs. The submission of contributions from over 185 countries in the run up to the Paris COP was seen as one of the most encouraging signs that a global deal was in reach, and was rightly lauded as a very significant achievement. NDCs will now be a cornerstone of the global mitigation approach and the aggregate impact of the NDCs over time will be scrutinised to assess progress towards the "well below 2°C" goal enshrined in the Agreement (Höhne, et al., 2014).

The INDCs that were submitted vary greatly, in the nature of the targets they contain, and the amount of information provided. But they are consistent in being essentially an articulation of the high-level

contribution a country is prepared to make, which was their purpose. While INDCs are statements of ambition and of political commitment, they lack detail on how these contributions will be achieved, for example regarding the actions that will be taken to reduce emissions (Roeser, et al., 2016).

As noted above, the Paris Agreement acknowledges that countries will need to design and implement specific mitigation actions to achieve their NDCs. It will be through these actions that emissions will be reduced, co-benefits achieved, and confidence built. The current interpretation of NAMAs – as specific mitigation actions – is well suited to act as one of the implementation vehicles through which developing countries can achieve their NDC targets. Around 40 developing countries recognised the reality of this relationship by explicitly referencing NAMAs in their INDCs. Furthermore, NAMAs are able to support other critical elements of the Paris Agreement: they constitute a vehicle for the provision of climate finance from developed countries to developing countries; and they can also help countries report their progress in achieving their NDCs. These three attributes are briefly explored in the following paragraphs (Kurdziel, et al., 2016).

Keeping global temperature rise well below the 2°C limit will require most countries, developed and developing, to transition onto a low carbon pathway. Mitigation actions must therefore be designed that will lead to 'transformational change' in how energy is produced and consumed, and in other activities and practices that lead to emissions. It will only be possible to implement these actions if they are aligned with national and sectoral priorities and policies, if they deliver sustainable development co-benefits to the actors and beneficiaries involved, and if they demonstrate genuine country ownership. The NAMA concept recognises this, and funders such as the NAMA Facility require evidence of these characteristics as part of their appraisal of potential projects. As such, with NAMAs, developing countries have at their disposal an implementation vehicle that has been developed to incorporate the critical success factors for achieving the emissions reductions required, and which can help them prioritise and organise mitigation actions (Höhne, et al., 2014).

1.6 Interlinkages between (I)NCDs, LEDS and NAMAs (Mdivani & Hoppe, 2016)

Since INDCs, LEDS and NAMAs all are important instruments to prepare and implement GHG mitigation policies in developing countries one needs to understand how they relate to each other. INDCs can be seen as a short or medium term goal which is used when implementing a LEDS. In this context, a NAMA as a country's pledge is similar to the mitigation component of INDC. Both NAMAs and INDCs are short or medium terms goals where the LEDS provide the long-term strategy for aligning economic development and climate change. Developing countries will use of NAMA as implementation tools to achieve these INDC goals/targets. MRV systems - being developed and implemented for NAMAs in countries - will also enable countries to transparently report progress on implementing actions to achieving goals of INDCs. The same can roughly be said about capacities and institutions built in countries for identifying, developing and implementing NAMAs, which in turn would support them to develop their own INDCs and MA**s**.

When designing the interlinkages among the INCDs, LEDS, and NAMAs embedding of these interlinkages in institutional frameworks is required. Mainstreaming efforts are likely to be enhanced, more focused and articulated, both with international requirements and with national needs, taking into consideration planning styles, leadership, inclusiveness, participatory processes and ownership.

2 EXPERIENCE WITH DEVELOPMENT AND IMPLEMENTATION OF LEDS AND (I)NDC SINCE 2010

2.1 LEDS development and implementation

Based on the research of LEDS development process in 8 countries OECD defines three the most challenging aspects of institutional arrangement, which contributes to the success of the process. These key drivers are: 1) leadership in the LEDS development and implementation phases; 2) trust between the members of the process in each level of communication, and 3) mutual accountability among the key stakeholders. Meeting these aspects is critical in order to accomplish result-oriented cross-government support (Clapp, et al., 2010).

The well-structured institutional arrangement strengthens communication flows with different ministries under a government, other stakeholders such as NGOs, private sector, scientific institutions and general public. The transparent mode for multi stakeholder coordination increase matchmaking in multiple donor and recipient activities. One of the indicators that contribute to high level of transparency is the clarity in defined roles and responsibilities for the key stakeholders involved in LEDS design.

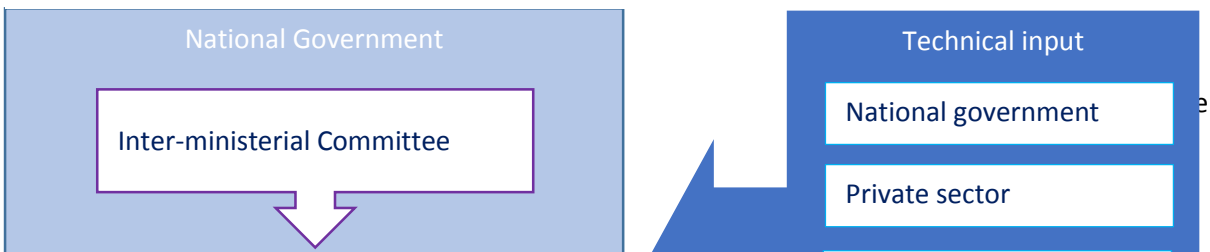
The study of the world experience in developing inter-disciplinary working platform for LEDS preparation discloses several mainstreams. For instance, the founding of cross-ministerial committees on climate change is a common practice in the countries such as Brazil, Chile, Mexico, the UK and etc. The key objectives of establishing this kind of institutional frame are to facilitate communication across ministries and to design multi-sectoral priority oriented strategy. There is some examples where a ministry plays the role of secretariat for the inter-ministerial committee. A wide range of stakeholders and multiple consultations needs to be organized and managed in order to follow a predetermined path. The literature strongly supports the idea that the highest level of government institutions would be better to define the key directions of the strategy development. Moreover, the establishment of a mandate and ownership at this level of government would guarantee the effective co-ordination among ministries and facilitate the necessary arrangements, such as technical support and allocation of human resources.

The practices in different countries indicate that in spite of ministries of environment lead the climate change related matters and receive multiple benefits for the other environmental issues by implementing climate actions, they do not have leading role in preparations of multi-sectoral plans nor putting climate change topics into economic and sustainable development planning. This point of view mostly works in the governmental structures, where the other ministries have more political weight than ministry of environment.

The threat related to the long time decision-making process taken by such kind of inter-ministerial committee would be possible to be avoided by developing the UK model. It considers the creation of a small size team (approximately 10 – 12 people) empowered the right to work with individual key stakeholder ministries in order to receive agreement and support on low emission policy development. The team was able to complete the work on Low Carbon Transition Plan within a six month. The deeper study of the case drives the researchers to the conclusion: “This may only have been possible because sectoral building blocks were already in place.” Furthermore, this approach not only requires sector developing visions, concepts and strategies in place but also, the mutual agreement among the ministries on principal aspects of a country development.

The OECD research offers general structure of multi-sectoral institutional arrangement for design of LEDS

Figure 1. Institutional framework for LEDS design



The institutional readiness for developing multi-sectoral activities, such as LEDS design does not complete only establishing inter-ministerial committee. The institutional arrangement should be followed by the framework, which clearly defines the roles of individual members of committee, the responsibilities of each governmental body and the relationships across the stakeholders.

These activities in some cases undoubtedly demonstrate the gaps in existing institutional arrangement of the governments that would hinder the multi-sectoral strategy development such as LEDS. The developing world experience shows complications in roles and mandate distribution and establishing of new overlapping institutions. For instance, Nigeria has tried to deal with climate issues by operating three different committees with dissimilar composition: the Inter-Ministerial Committee on Climate Change (ICCC), the National Committee on Climate Change, and the National Roundtable on Climate Change. The coordination across three different committees is most cases is time consuming due to the several reasons, including bureaucratic procedures, limited communication between all involved institutions, etc. Moreover, the weak linkages throughout the operation of the committees are mainly caused by ambiguity in roles and mandate determination of each committee.

2.2 2.2 INDC development

The climate society had a milestone – COP21 – in order to represent their contribution towards achieving the convention climate goal. By the end of the conference 187 Parties to the UNFCCC had submitted their INDCs, covering 95 per cent of global GHG emissions (Roeser, et al., 2016).

In most cases, the preparation of INDC itself associated with coordinated technical and political processes at different scale. In spite of government level engaged in the climate contribution development practice, for many countries it was a case where the higher level of key line ministries and/or the head of the government were invited to be involved in national climate policy design.

The comparison between the INDC preparation and post-process surveys shows the fact that at the beginning of the process the countries had a firm expectation of the involvement of high level of government, such as key Ministers, Parliament, or head of the state. In most cases, the result was something different, ministerial level signs off. The analysis of such changes during the INDC development proves contributes to the following conclusion: In such cases, there is no or few new policies included in

INDCs mostly caused by a poorly synchronised technical and political national processes (Roeser, et al., 2016).

In many countries, the climate related processes, such as Low Emission Development Strategy design, Nationally Appropriate Mitigation Actions elaboration, Technology Needs Assessment were considered inter-ministerial coordination at a technical level. Based on these experiences the political engagement in climate agenda is relatively new perspective of work. The limited knowledge of such institutional arrangement and ambiguity of its roles and benefits provided only several countries with a governmental structure involving institutions higher than ministry level for the mitigation policy development.

The coordination body included either parliament or ministerial cabinet creates opportunity for political support and integration of climate issues in key line development strategies and policies. Although, in theory this structure of coordination has a potential to increase effectiveness in combating climate change at a national scale, it contains threats related to the building new institutional body, which is resource demanding and time consuming process. Moreover, at the decision making level lack of the technical knowledge on climate change requires extra work for preparing brief political documents with reflecting wider political multiple benefits in order to illustrate balances between competing political agendas.

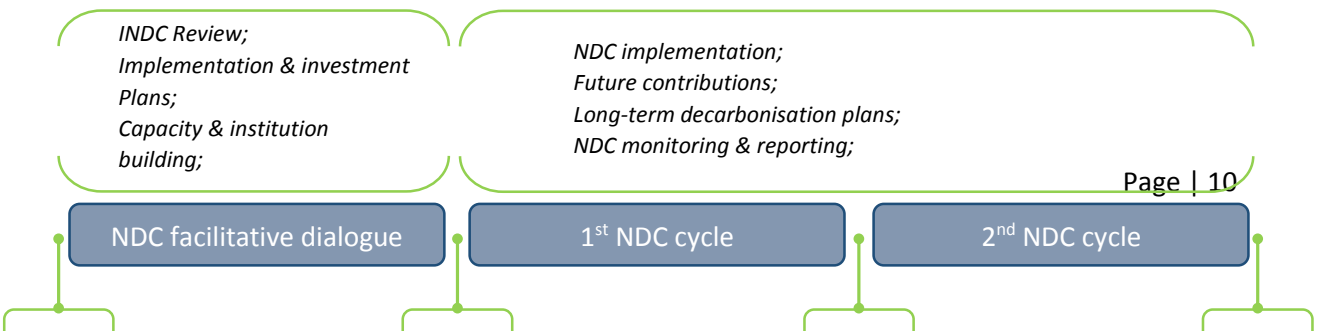
In 2015 the Conference of Parties provided a new, historic agreement towards the joint movement against climate change. After the ratification of agreement by the representative governments INDCs will turn into Nationally Determined Contributions (NDCs). In accordance with the decision of COP21 the have to submit their first NDCs no later than 2019. Subsequently, in terms of NDC development the literature allocates three phases in the upcoming fifteen years period. The first phase covering four years for INDC review and preparation of NDC is called facilitative dialogue. It includes following key tasks (Roeser, et al., 2016):

- Revision of fairness and ambitious levels of INDC;
- Preparation of Implementation Plans;
- Design of Investment Plans;
- Development of Capacity and Institution building Plans;

The first NDC cycle - the second phase of NDC timeline – would address the implementation of NDC till 2025. The fifteen years period will be ended by the second NDC cycle. Both phases will consist of the tasks bulleted beneath:

- Implementation of NDC;
- Preparation of the future contributions;
- Submission of Long-term Decarbonisation Plans;
- M&R of NDC cycles;

Figure 2. NDC cycles



In most of the countries the INDC development process has been conducted by mobilizing of technical and political stakeholders from different fields of economic sectors. The literature considers the implementation of NDC would require multi-stakeholder platform due to the inter-disciplinary nature of climate mitigation measures. For instance, New Climate Institute develops the idea to "ensure continued coordination and mainstreaming of climate mitigation activities existing institutional processes and capacities need to be maintained, reinforced and in some cases enhanced" (Roeser, et al., 2016)

The regular briefings and meetings for the key ministries, non-government representatives and other related stakeholders on the Paris Agreement to discuss countries upcoming measures keep the format alive created during the INDC preparation. It benefits to awareness enhancement and stakeholder attention to mitigation possibilities.

Another even more advanced approach would be the institutionalization of NDC coordination across governments aiming to build well-founded processes, responsibilities and lines of reporting. Such institution should consist of key line ministries and UNFCCC focal point. Moreover, the other relevant entities can be considered depending their ongoing roles and inputs in climate related activities, such as data collection, vulnerability assessment, mitigation and adaptation parallel processes. The involvement of central government branches in the process mostly triggers the setting up a permanent coordination committee or body. Similar to the LEDS process here literature highlights the significance of clearance during the designation of the mandates and responsibilities of individual involved entities. Furthermore, the competencies and roles during the communication and decision makings should be identified undoubtedly.

One of the supportive actions for setting up strong, target oriented coordination platform is to develop resource plans at institutional level for NDC implementation. It contributes to the identification of human resource limitations and illustrates the existing gaps. Based on these results mapping out the capacity building needs would create one of the fundamental building block for the effective operation of coordination body (Kurdziel, et al., 2016).

Only afterwards the coordination body would be able to deal with the tasks, such as structuring of work plans and roadmaps in order to synergise the technical and political processes towards the fulfilment of NDC cycle goals. The coordination body would be responsible to determine specific milestones, timelines, mandates and allocation of adequate recourses necessary for the meeting the objectives.

To sum up, the implementation of NDC cycles would "require significant resources, public and private, domestic and international, to continue and scale up immediate mitigation actions and to support the necessary long term decarbonisation" (Roeser, et al., 2016).

3 PROBLEM STATEMENT

When we talk on the development of Energy and Climate change fields in Georgia two internationally published documents need to be considered: 1. The EU Georgia AA and 2. INDC of Georgia. The first document, taking into account its purpose, importance, objectives, and potential benefits performs the

overarching role for all strategies, programmes, plans adopted in the country. Consequently, all future oriented documents have to align with the AA outlook and at least, contribute to fulfill the Agreement goals.

The INDC document provides the country's vision on GHG emission management and mainstreams the adaptation aspects for upcoming 14 years period. Measures necessary to meet climate change targets cover different sectors, including energy. Thus, INDC involves cross-sectoral issues requiring coordinated effort from different stakeholders.

The Ministry of Environment and Natural Resources Protection of Georgia presents set of activities mainstreamed by the AA (Gogaladze & Ralph, 2015). The roadmap mostly considers the tasks within the determined timeframe from 2013 to 2017. In spite of the emphasizing constraints related to requirement of "close cooperation with and strong support from other Ministries and local governance" (Gogaladze & Ralph, 2015), the document does not mapping out institutional relationships either existing or essential for the measures implementation at a horizontal level among the key ministries.

In addition, intra-governmental coordinating mechanism has developed under the Low Emission Development Strategy (LEDS) preparation process since 2013. The general guidance and coordination committee composition has been determined at the beginning of the programme. The LEDS development covers several different economic sectors, including energy. In spite of four years' experience the coordination among the ministries is significantly limited under either the expert working group or sub-working groups.

4 RESEARCH OBJECTIVE

The research objective is to make recommendations to the government of Georgia to develop of an NDC Roadmap with regards to inter-ministerial coordination on the implementation of the EU Association Agreement energy tasks allied to climate change by providing a clear insight into the problems concerned with the institutional arrangement during the dealing with Climate & Energy cross-sectoral issues.

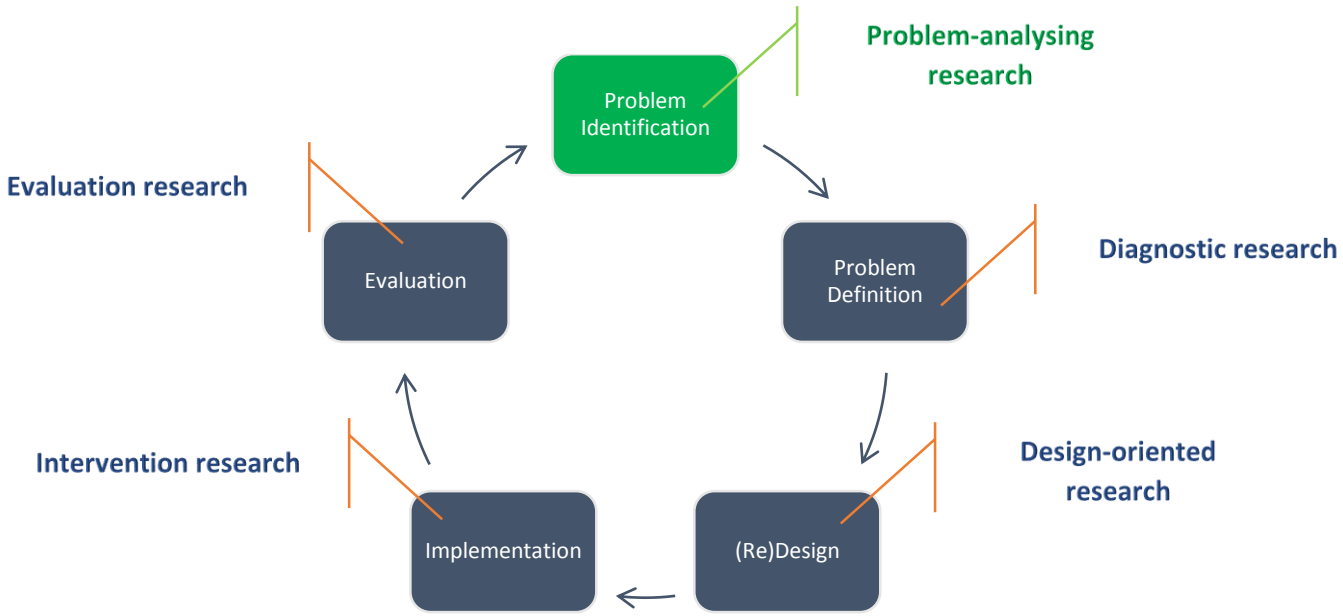
5 RESEARCH FRAMEWORK

In accordance to the research objective, the aim of the research is to formulate *recommendations* to the government of Georgia to develop of an NDC Roadmap with regards to inter-ministerial coordination on the implementation of the EU Association Agreement energy tasks allied to climate change.

The research object is the institutional arrangement during the dealing with Climate & Energy cross-sectoral issues.

Georgia has a "desired" situation in Energy – Climate field stated in either the EU Georgia AA or INDC documents on the one hand, and country's current state has demonstrated a limited coordination and insufficient synergy practices in these fields, on the other hand. In order to fill the gap between current and desired situations the critical task is to indicate a certain factors as a problem. In terms of *intervention cycle* the process is still on first stage: **Problem identification,** which corresponds to 'agenda setting' performance (Verschuren & Doorewaard, 2010). This stage envisages activities related to problem identification, problem determination and problem ownership. Since the key organisations still have difficulties to formulate the problems concerning coordination and matchmaking activities, the Problem-analysing research type would mostly correspondence to the study.

Figure 3. Intervention cycle complemented with research types



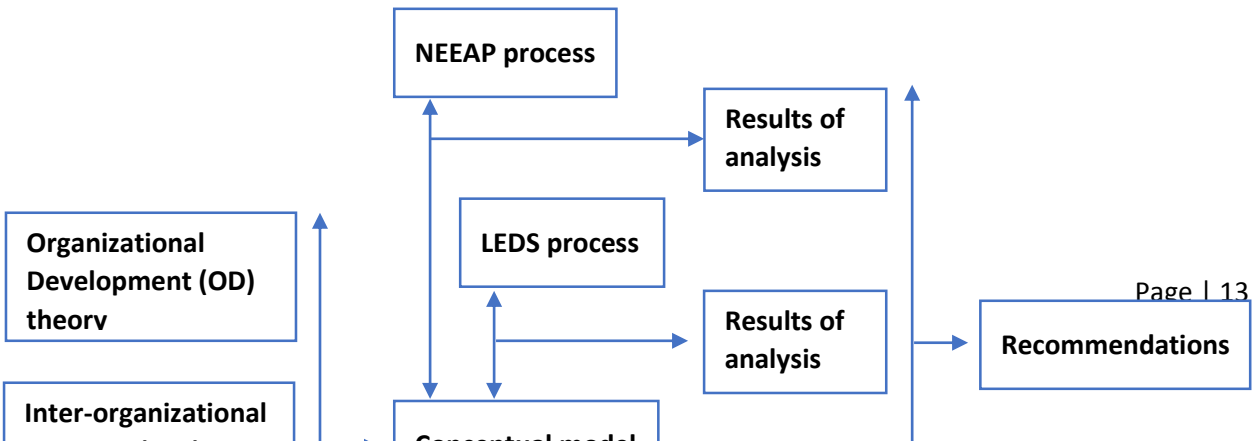
In addition, Problem-analysing research has a particular advantages, such as high chance to be gathered correct data, no determination of interviewees' positions, and keeping attainable boundaries, which mostly reduce barriers during the working with civil servants and governmental institutions.

For the research project in order to develop the conceptual model the scientific literature was studied.

Key concepts	*Theoretical frameworks*
- Organizational systems	- Organizational Development (OD) theory
- Inter-ministerial relations	- Inter-organizational relations (IOR) theory
- INDC & NDC	- Climate Policy theory

At the beginning of the research project three abovementioned theoretical frameworks are analysed and confronted with each other. The confrontation allows identifying substantiated critical factors of effective inter-organizational coordination around the climate policy forming the conceptual model. This conceptual model constitutes the research perspective (Figure 4).

Figure 4. Schematic representation of research framework



Hence, an analysis of inter-organizational relations, in terms of critical factors of effective inter-organizational coordination around the climate policy, provides a number of subjects for analysis, (b) by means of which the ongoing two cases (NEEAP under AA development & LEDS) will be analysed with regards to the desired situation for providing inter-ministerial coordination. (c) A comparison between the results of these two analyses provides (d): an insight into the inter-organizational coordination problems that must be overcome by the key stakeholders in order to be able to successfully implement the Climate & Energy cross-sectoral tasks.

6 RESEARCH DESIGN

'Careful craftwork'

6.1 Research strategy

The research objective and framework concern the particular subject for further study - inter-organizational cooperation – through the narrowing approach that opts for climate & energy cross-sectoral boundary. This kind of approach "yields knowledge that can be generalized to a lesser extent, but nevertheless will enable the researcher to achieve depth, elaboration, complexity and soundness, thus minimising the risk of uncertainties" (Yin, 2013). Accordingly, the planned research has an in-depth strategy nature.

The development of conceptual model built on the outlined critical factors through the analysis of OD, IOR and climate policy theories, requires qualitative literature study. Moreover, the juxtaposition of conceptual model to the results received from the observation of the relevant cases in Georgia instigates interpreting approaches.

Figure 5. Three key decisions for designing research strategy

The research framework and questions considers the study of current inter-organisational coordination activities related to the climate policy development and the EU AA energy sector alignment with relevant national strategies. Correspondingly, in order to observe and gather appropriate materials the field research arrangement contributes to the study quality. Hence, a set of crucial decisions for designing research strategy follows deep, qualitative, interpreting and be doer approaches (Figure 5).

Figure 6. A case study method main characteristics

The research framework covers climate change mitigation current activities comparative analysis, investigation of ongoing LEDS & NEEAP preparation processes in Georgia and finally, by using diagnostic gap-analysis methods identification of inter-ministerial coordination problems in INDC. Accordingly, the abovementioned analytical work requires research in a detail manner. Hence, the case study research will be focused on depth.

1. A small domain, consisting of a small number of research units;
2. Intensive data generation;
3. More depth than breadth;
4. A selective, i.e. a strategic sample;
5. An assertion concerning the object as a whole;
6. An open observation on site;
7. Qualitative data and research methods;

Moreover, investigation of ongoing the EU AA implementation processes in the government of Georgia, considers interviews with knowledge suppliers, experts. Mostly, these types of interviews are the sources of qualitative information by applying open questionnaire. Subsequently, the research relies on the qualitative approach (the methodology of qualitative data analysis is represented in Annex).

The decision made to conduct research based on qualitative approach partly defines the empirical character of the research. Furthermore, since the fieldwork consists of interviews with both policy makers and experts of the climate change energy sector mitigation field the appropriate data will be collected and evaluated by using the envisioned analytical methods. Therefore, the empirical research is necessary to have insight into inter-ministerial coordination during the climate change mitigation actions development process.

According to the characteristics of case study research strategy it totally matches the proposed research framework. For instance, a small amount of research cases are considered during the case study strategy. Accordingly, the research studies LEDS/NEEAP preparation and the EU AA energy sector implementation processes. The strategy characteristic, focusing on depth during the survey, corresponds with anticipated knowledge providing interview types. The connection between comparative case study strategy steps and research questions are adduced on the table below.

Table 1. Connection between research questions, research framework steps and methodology

Central Research Question	Framework steps	Methodology used
1. What critical factors yield the effective inter-organizational coordination around the climate policy?	(a) Block	Comparative analysis

2. How has the inter-ministerial cooperation developed for considering climate & energy related measures in Georgia?	(b & c) Block	Comparative analysis Contextual interaction theory*
What kinds of problems are arisen during the inter-organisational coordination in development of climate & energy cross-sectoral strategies in Georgia?	(d) Block	Diagnostic gap-analysis

** used to assess LEDS/NEEAP preparation process*

6.2 Research materials

6.2.1 Data collection

6.2.1.1 Interview

The main stakeholders have been divided into several categories for the interview. Civil servants and LEDS working group members have been respondents. NGOs, experts and community organization representatives have been the suppliers of knowledge. The survey process has been conducted by using interviewing techniques. The potential interviewees and research question connection to the anticipated interviews are represented in the table below.

Table 2. Field work connection to research questions

Central research question	Sub research questions	Interviewee	Type of interview
What kind of problems are arisen during the inter-organisational coordination in development of climate & energy cross-sectoral strategies in Georgia?		Ministry of Energy representatives* Ministry of Environment and Natural Resources Protection representatives* International organization representative	Open interview
1: What critical factors yield the effective inter-organizational coordination around the climate policy?	What lessons can be learnt from current INDC/NDC practices in terms of IOR and OD?	Mitigation experts from developing countries & NGOs representatives & International organizations representatives	Open interview
	What institutional barriers are revealed during the INDC/NDC development?		
	What cooperative gaps are revealed during the INDC/NDC development?		
	To what extent do stakeholders comply with IOR and OD operation during the climate & energy cross-sectoral performance?		

2: How has the inter-ministerial cooperation developed for considering climate & energy related measures in Georgia?	What kinds of institutional arrangement are existing for development of LEDS/NEEAP in Georgia? What are the institutional barriers for development of the LEDS/NEEAP?	USAID representative Winrock international representative LEDS/NEEAP coordination committee members	Open interview
	What mitigation measures are incorporated in the EU AA energy sector for Georgia? How the horizontal coordination among the key ministries is developed concerning the EU AA climate & energy measures? What kind of institutional gaps are occurred in the EU AA implementation process? What were the major trends regarding INDC preparation process?	Ministry of Environment and Natural Resources Protection representative* Ministry of Energy representative* Office of the State Minister of Georgia on European & Euro-Atlantic Integration representative* International organization representative	Open interview

** The representatives of the ministries have been selected regarding their working duties from different services.*

By taking into account the busy working schedule of interviewees, the questionnaires were as simple and dense as possible. Subsequently, gathered information was reported, analyzed and concluded in the report beneath.

6.2.1.2 Literature

Search method of academic and professional literature

The snowball method (Verschuren & Doorewaard, 2010) is going to use for searching academic and professional literature. First of all, the most widespread publications on Climate Policy has been selected and overviewed for recognition of conformity with our research. In some cases, brief scan (Fink, 1998) has given additional key words and deeper insight. These key words have been used for additional search. At the beginning of literature[1] analysis, it is not expected that we have found new significant concepts related to inter-organizational coordination which will require further investigation in written materials.

Use of academic and professional literature

The main objective of working with literature is to formulate new knowledge and vision. Since INDC is a relatively new prospect for climate change negotiations and different approach for the developing countries in conceptualizing climate related inter-organisational coordination, the well-structured ground theory approach (Verschuren & Doorewaard, 2010) have been used. The theory requires theoretical sensitivity vision and inquisitive attitude from the researcher. The theoretical sensitivity gives us an opportunity to understand issues deeply, give meaning to data and set apart the core concepts for our topic. Simultaneously, inquisitive attitude helps us being critical and skeptical during the written material analysis.

Furthermore, the method considers the continuous comparison process (Fink, 1998). The juxtaposition of findings curtails part of the data interpretation and formulation of theoretical concepts.

[1] See references

The written material review in the climate policy development subject gives us clues in the following areas:

7 THE GEORGIA CASE STUDY

7.1 LEDS Development

Georgia is one of the partner countries in the low emission development initiatives launched by the United States in early 2011. The emission reduction targets of Georgia, as stated in the INCD that was submitted to UNFCCC (on 25 September 2015), concerned a 15 percent (unconditional) and 25 percent (conditional) emission reduction as compared to BAU to be achieved by 2030. The additional reduction up to 25% is conditional based on a global agreement addressing the importance of technical cooperation, access to low-cost financial resources and technology transfer.

In 2013, a five-year program "Enhancing Capacity for Low Development Strategies (EC-LEDS) Clean Energy Program" was launched. It received support, including financial aid, from US-AID. The objective was to support the Government of Georgia (GoG) in strengthening climate change mitigation efforts by supporting energy efficiency and the adoption of renewable energy production technology. The main goal of the program was to improve both responsibility towards low GHG emission development and to enhance the country's sustainable use of natural resources. A multi-stakeholder approach brought together both government parties (central and decentralized governments) and private sector parties in joint decision making and the implementation of low carbon projects. The EC-LEDS program consisted of three key components: (1) quantification of GHG emissions; (2) emission reduction actions; and (3) institutionalization of climate change mitigation in ten municipalities. At the same time, however, Georgian cities were engaging with climate change mitigation actions in another way. By 2013, four of those cities had signed "Covenant of Mayors" (CoM) agreements, having prepared (local) Sustainable Energy Action Plans (SEAPs) of their own. The CoM is a European movement involving local and regional authorities, voluntarily committed to increasing energy efficiency and use of renewable energy sources on their territories. By their commitment, CoM signatories aim to meet or exceed the European Union 20% CO2 reduction objective by 2020. CoM has its background in the 2008 EU Climate and Energy Package, from which the European Commission launched the CoM to endorse and support the efforts deployed by local authorities in the implementation of sustainable energy policies.

Activities designed to facilitate the vertical coordination of actions in Georgia included: (1) the development and implementation of SEAPs; and (2) founding sustainable energy offices and regional sustainable energy resource centers. The cities that were to become CoM signatories were assisted by the program support groups to build capacity via: software supporting SEAP design, guidelines for GHG emission inventories and staff training in workshops addressing SEAP preparation milestones. The program anticipated the involvement of central government representatives. Figure 1 presents an overview of the procedures for SEAP preparation and implementation by cities.

The main decision making body in the LEDS system is the Management Board (Steering Committee (SC)), which is chaired by the Minister of Environment and Natural Resources Protection. The Board consists of the highest level representatives of all climate change-related Ministries, the deputy ministers. The Steering Committee enables the LEDS design processes. It has the authority to adopt working plans, establish implementation units and communicate with the GoG. The committee considers reports, advice and plans and proposes actions for the Working Group, which is the counseling body of the managerial system. The Expert Working Group (EWG) includes civil servants from central government, as well as independent experts. The key functions of the group involve preparing detailed working plans that specify how LEDS targets are to be attained, identifying priority sectors and reporting to the SC on the progress

made. Under the EWG, six sectoral Sub-Working Groups (Sub-WGs) have been established for the sectoral domains of agriculture, construction, energy, forestry, industry, transport and waste. The activities of each Sub-WG are controlled by the EWG to maintain the transparency and consistency of work related to technical and policy standards. The Sub-WGs provide regular updates of the technical work to the EWG. In addition, the Sub-WGs prepare sectoral policy visions and strategies. Since 2015, after the elaboration of the Sustainable Development Goals (SDGs), each Sub-WG was asked to address the issue of the fulfillment of the SDGs in their set of tasks.

The WG assesses the sectoral policies developed by the Sub-WGs in a cross-sectoral approach. An amalgamated version is presented to the SC for final consideration. The Sub-WGs are coordinated by the different ministries in accordance with their working area. Further, the Climate Change Office (CCO) under the Minister of Environment and Natural Resources Protection of Georgia (MoENRP) performs the role of Secretariat to the LEDS process. The Secretariat is responsible for organizing the SC and WG meetings. The CCO is also responsible for preparing adequate documents for the meeting and keeping all documents related to the coordinating committee.

7.2 Barriers to LEDS Implementation

Vertical policy integration is considered in multiple (sequential) components of EC-LEDS. The program offers a dialogue platform between national and local authorities. Although there is clearly an opportunity for vertical integration (and willingness at both the national and local levels), there is a lack of coordination between central and local levels of government. Moreover, the vertical integration process has a rather temporal and occasional nature. In the CoM-SEAP process, it is mostly local authorities that are involved in preparation processes. They determine the priorities and scope of mitigation actions at the local level, without discussing or coordinating this with central government actors. The involvement of central government in this process is very limited, as central government officers seem only to observe the process passively and attend local SEAP workshops only infrequently. Moreover, the EC-LEDS development process theoretically tends to emphasize vertical integration, but at the same time seems to neglect horizontal integration. The EC-LEDS steering committee composition opens up space for the involvement of local government representatives at the Sub-WG level. However, municipal-level representatives are usually absent from those WGs. Moreover, the involvement of national authorities in SEAP development workshops was only possible due to the program budget, which was internationally funded. A lack of financial resources from either the municipal or central government could severely impact climate change mitigation policy integration.

There seems to be much confusion between the stakeholders involved, particularly between the various ministries involved. There are different reasons for this. First, LEDS (and even the very “lowering of GHG emissions”) were conceived of as very abstract concepts. During expert WG meetings, attendees (all government officials) complained about “too much information”, an “unknown topic for the audience” or “still not understanding the very idea”. This seems to be related to improper prioritization of issues, where the co-benefits of low carbon actions and program goals are confused with the actual policy goals of lowering GHG emissions. Furthermore, the ministries involved tend to confine their views to their own areas of interest, while failing to embrace the interests and responsibilities of other stakeholders. What adds to the confusion is that stakeholders tend to speak their own “language”, which inhibits communication and, hence, inter-stakeholder coordination. This in turn leads to the evasion of tasks and a failure to initiate issues.

Moreover, the fact that the EC-LEDS program is supervised by the MoENRP has the consequence that other ministries view themselves as only providing auxiliary functions. Hence, they feel less responsibility to commit themselves to the program’s tasks. Additionally, the coordination committee group members also evaded their duties, which are related to a lack of formal commitment to LEDS, as it was not written down in department statutes, except for MoENRP. In turn, this seems to be related to the superficial

attitude of departmental chiefs, which reveals little actual commitment when it comes down to (collective) program work. It turns out that direct departmental tasks are clearly prioritized over LEDS work. This is worsened by a lack of (continuous) expertise due to staff fluctuations and a lack of earmarked budgets due to poor prioritization of climate change mitigation goals on the national policy agenda.

7.3 NEEAP Development under AA

The adoption of Association Agreement (AA) between the EU and Georgia have influenced in individual ministries working agendas with regards to determination of action plans in order to fulfil the objectives written in AA during the given timeframe. Accordingly, in most cases since the September of 2014 the timer has switched on for elaboration of sectoral development plans. There are many sectors that also is taken into account under the (I)NDC projections. Correspondingly, the measures taken based on AA would mostly have an influence in GHG emission trends. For instance, in energy sector, there are several directives that have a potential to highly effect on GHG emission trends from this sector. The directives are bulleted beneath:

1. The Energy Efficiency Directive 2012/27/ EC;
2. The Directive 2009/28/EC of 23 April 2009 on the promotion of the renewable energy from renewable sources and amending and subsequently repealing Directive 2001/77/EC and 2003/30/EC;
3. The Directive 2010/30/EU of May 19, 2010 on the indication by labeling and standard product information of the consumption of energy and other resources by energy related products;
4. The Directive 2010/31/EU of May 19, 2010 on the energy performance of buildings.

The activities driven by the Ministry of Energy for association of Energy Efficiency Directive is considered as another case for study.

In 2015 the Ministry of Energy launched project for preparation of National Energy Efficiency Action Plan (NEEAP) by support of EBRD. The aim of the process is to develop guiding document for increasing EE level in Georgia by proposing particular EE measures agreed with different stakeholders. In order to achieve the project goal the working group has created involving all key line ministries (including Ministry of Economy and Sustainable Development, Ministry of Environment and Natural Resources Protection, Ministry of Finance etc.) and technical experts.

The Ministry of Energy has performed the role of driver of the process, which included tasks not only the organizing meetings and providing adequate information to the stakeholders in time but also the determining the pathway and key pillars of the NEEAP development. Hence, in most cases the Ministry of Energy has been seen as a leader of the process. It supported the idea across the stakeholders that the process has owner that is key responsible entity for the deliverables.

The stakeholder ministries have typically addressed the cross-cutting issues related to the multiple benefits of NEEAP implementation. For instance, Ministry of Economy and Sustainable Development has a scope to consider synergies between the action plan and economic development policies such as economic green growth strategy. In case of Ministry of Environment and Natural Resources Protection the main task is to consider NEEAP potential in GHG emission reduction and integrate NEEAP activities in NDC development process.

Moreover, the working group involved non key line Ministries, such as Ministry of Internal Affairs. This entity was responsible for provision of the data of vehicle fleet. In conclusion, the involved entities in the NEEAP preparation have been sorted by taking into account their power and interest in the process. Accordingly, the approach strategies would be slightly different, which is considered beneath in detail.

7.4 Lessons Learnt from NEEAP Development

The coordination process among the stakeholders can be summarized under the three main pillars, as bulleted beneath:

- Ongoing interconnected activities;
- Anticipated policies and programmes correlated with EE;
- Comments on NEEAP potential measures and assumptions.

The coordination across the stakeholders has been implemented by using the three different instruments. The **bilateral meetings** mostly utilized for introduction of topic and deeper study of ongoing matters in a particular entity, which would have brought valuable input to the NEEAP preparation.

In order to increase the transparency and visibility of process the **working group** discussions have integrated in. It would create platform for technical level of various entities to consider cross-cutting matters jointly in a discussion format. The observation of the meeting have identified that the multi-stakeholder dialogue environment has facilitated the changes of opinions on the topics and formed space for face to face dialogues as well. On the other hand, large group meetings has drawbacks mostly related to the limitations on involvement in discussions. The cases, where some participants were more hesitant for making comments and asking questions, were accompanied with these working group meetings.

The emailing system used for preparation and follow-up of the meetings was another significant part of the communication aiming to facilitate stakeholders' permanent involvement in the process. Based on the analysis of replies received from the stakeholders, the project team has developed the conclusion that the group emails efficiency in terms of providing comments and suggestions are limited. One of the possible cause of this pattern can be the working discipline in Georgia. In most cases, it follows a vertical hierarchic order where horizontal relations are newly emerged. Accordingly, in such working environment, direct email system more clearly determines responsible persons than the grouping approach. Moreover, the absence of approved procedures for the performances of individual members of working groups forms window for developing such gaps.

The development of NEEAP was involved not the technical level of governmental entities but also the decision makes at a deputy minister level. The particular approach used under the project has increased the efficiency of preparation process. The accurately and clearly defined milestones requested decision makers input were identified during the project development process step-by-step. For instance, during the inception workshop the decision makers were requested to provide their vision and expectations from the project. Afterwards, the discussions with key political issues have been continued bilaterally. For example the opinions with NEEAP target and private sector involvement were collected individually from deputy ministers. Hence, such involvements of the decision makers facilitate the project and gave more dynamism to the coordination process.

8 CONCLUSIONS

Both LEDS and INDC developments in Georgia are subject to barriers that considerably slow development. Both vertical and horizontal policy integration were limited under the EC-LEDS program. INDC preparation relied heavily on top-down initiatives, international aid and collaboration between supportive professional organizations and EC-LEDS actors. In this sense, the EC-LEDS programme for Georgia is considered highly important, requiring careful attention in the INDC development process. The shift from a predominantly decentralized, low-carbon approach (prior to preparation of mitigation actions) to an approach that includes a considerable top-down orientation appeared to be challenging, essentially in the area of organizing communication between different levels of government and between government and stakeholders.

Table beneath presents an overview of barriers encountered in the EC-LEDS programme and the implementation of NDC in Georgia. The majority of these barriers originate from poor prioritization of climate policy by (most departments of) the central government, poor coordination between government bodies, institutional inertia and a lack of capacity. This was revealed in problems regarding uncoordinated policy approaches, little alignment of visions and poor coordination of actions between central and local governments, lack of experienced staff and an inadequate (earmarked) budget. It appears that the climate change mitigation policy at the state level is only taken seriously by the MoENRP. Table beneath presents a list of options for breaking down some of the listed barriers.

Table 3. Recommendations for overcoming Barriers

Barriers	Recommendations for Breaking Down the Barriers	Linkages with NDC development process
Lack of coordination between central and local levels of government	Since the CoM is going to continue beyond 2020, the local level involvement in a NDC cycles process would be helpful; not only for vertical integration, but also for more feasible 2021-2030 climate action plan procurement. The appropriate place where local authorities' involvement can be provided would be in the coordination body WGs. In order to improve the poor level of coordination between central and local levels of government, inter-governmental discussion should be facilitated. The permanent distant communication services, such as video calls, webinars and teleconferences under the NDC development process would provide advantages in terms of reducing the demand for face-to-face meetings and the reduction of travel costs. In order to strengthen the vertical integration under the NDC cycle in Georgia, a regulatory framework, such as a MoU, between central government coordinators and local government officers should be established. By signing the memorandum, both parties are expected to take their own responsibilities, which might facilitate the coordination between government levels in a vertically-organized manner.	The interrelated measures should be taken into account during the NDC preparation process. Based on the developed climate action plan 2021 - 2030 the vertical coordination would continue in NDC implementation cycles (1st and followings). This measure needs to be initiated as soon as possible during the pre NDC preparation stage. Afterwards, it may be developed by transforming or changing patterns based on identifying best practices and effective tools. The legislative incentives can be addressed during the NDC preparation phase in 4 years period of time (from 2016 to 2019).
Absence of procedural arrangement	The establishment of the inter-ministerial, multi-stakeholder coordination committees/working groups should be supported by adopting adequate procedures, where the rights and duties of individual entity representatives will be identified.	This measure would take place in priority agenda after completing LEDS. Although, the preparatory actions should be addressed in early possibility.

Knowledge outflow	Since both LEDS and NDC implementation cycles require time-consuming processes and include multi-stakeholder approaches, personnel outflow is rendered inevitable. In order to reduce adverse effects, it would be better if all kinds of information were saved as copies by the climate change office focal point of the NDC cycles. The information would be sorted by subject, such as: meeting reports, technology options and evaluations, analytical materials, procedures or decisions to be made.	The decision to follow this recommendation and adopting appropriate procedures inside the Ministry would be made at the beginning of NDC preparation, no later than 2017.
Limitations in understanding the basic concepts and working mechanism of NDC implementation measures by the potential national implementing organizations	In order to address donor organization's feedback, the national implementing organizations would need capacity-building measures. One of the possible options would be to address a learning-by-doing approach by providing external expert support.	This measure would be considered in 2021-2030 climate action plan addressing implementer stakeholders' gaps and needs.
Lack of data/information	Setting up a sophisticated data collection system in the country is crucial for defining a holistic picture with regard to GHG emission by economic sectors and geographical coverage. Moreover, the inventory-in-depth is a step forward during mitigation project idea selection and estimating the level of ambition. Accordingly, the MoENRP as a focal point of climate change mitigation issues in the country is required to manage such an inventory system. The data collection can be implemented by out-sourcing by cooperation with an appropriate statistics unit, such as the National Statistics Office of Georgia. Before the statistics office starts operation with regard to data collection for the GHG emissions inventory, a legal framework should be established to regulate coordination between the statistics agency actors from both the public and private sectors.	The data collection system would be better to be ready prior to beginning of 1st NDC cycle. The appropriate procedures would be designed and adopted during the pre NDC preparation stage until the end of 2017. The decision on strengthening coordination between key line entities and statistics office in terms of climate related data management better to be made during 2017. The adoption of adequate legal framework would be a next step implementable during the NDC preparation phase.

Methodology of Qualitative Data Analysis

After gathering the materials from the field work

STEP 1: Processing

The data processing in qualitative analysis consists of converting the field work materials, such as tape records, note, video, etc., into text. The data processing is done directly after gathering the materials. This approach reduces the risk of losing valuable information.

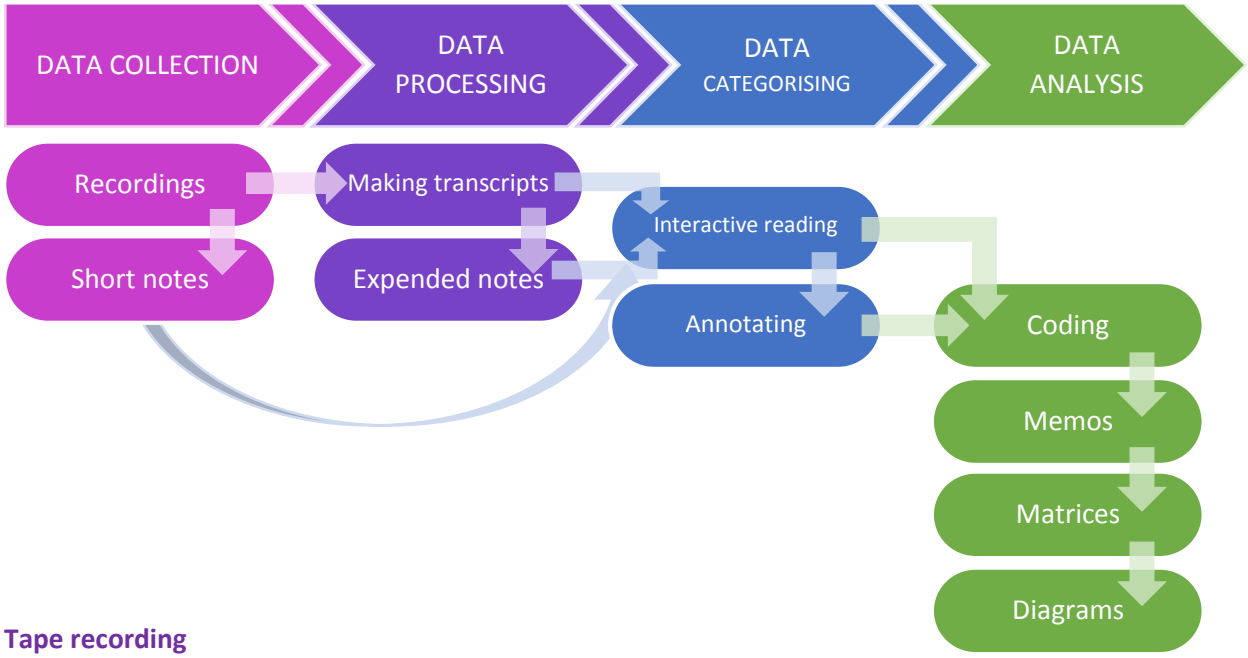
Notes

Field notes are made during the interview or observing the meeting. It creates an opportunity to keep all kinds of information like visual and verbal, as well as thoughts and ideas that occur during field work. During the work on the policy research? Four types of notes are used:

Short notes
Expended notes
Fieldwork journal notes
Memos

Short notes are made during the material gathering. Expended notes and Fieldwork journal notes are done immediately, after each field session. Comparing with the expended notes, the fieldwork journal notes (annotations) consists of problems and ideas related to the research topic raised during the field work. Memos can be considered as a result of analysis and interpretation. Accordingly, it is a last stage of noting. The time sequence and relationship between note types are illustrated in the Figure 7.

Figure 7. Note types sorted by sequence and relationship to each other



Tape recording

Two levels of transcription are used during the research: Semi-transcription is useful in reducing redundant information. This occurs in recordings that consist of the information beyond the research questions or in cases wherein an interviewee repeats information. In other cases the full transcriptions

are used. For instance, most Georgian language interviews are typed based on semi-transcription method. Meanwhile, the conversations are mostly converted to text in accordance with the full transcription method. All transcripts are written with the same template, since it facilitates comparison and analysis. Furthermore, fictitious names for people and places are used to anonymize data.

STEP 2: Categorisation

Reading and Annotating

Data processing converts field work materials into a written form. The interactive reading method is useful for extracting valuable information. Several techniques cover the method as shown in table 4.

Table 4. Interactive reading method

Name of techniques	Description of techniques
Interrogative Quintet	Questions such as *Who? What? Where? When? Why?* help to further explore data. These questions creates opportunity to observe the context, intentions, processes and outcomes of the data.
Substantive Checklist	
Transporting Data	"Transposing data helps clarify assumptions implicit in the research situations and our reaction to it."
Making Comparisons	Compare desired situation with current one. How is it different? What is the reason of deviation?
Free Association	By taking into account the key elements in the data set identify all the images raised
Shifting Focus	Use different perspectives for data analysis
Shifting Sequence	Different sequences for data analysis

Annotations provide a platform for analysis and help data interpretation by providing observations and personal remarks regarding the data.

Creating Categories

For managing data easily, coding and labeling the text is a helpful method. Similar ideas, opinions, visions, facts etc. covered by one code cause the data reduction. Hence, coding makes the comparative analysis process more sophisticated and reduce the risk of missing important details.

According to the research goal – to find the causes of the cooperation problems between national and local levels – the data is reviewed and coded line by line in a detailed manner. The prioritisation of the codes is not necessary.

The potential items that can be coded in transcripts are shown in the Table 55 beneath.

Table 5. Transcripts coding items

Settings and context	General information on surroundings
Meanings	Point of understanding, defining and perceiving
Behaviours	What people do
Perspectives	How things are done
Ways of thinking about people and objects	Look at the issues in different perspective
Processes, events, activities	

Strategies	Ways of accomplishing things
Relationship and social structure	Cliques, coalitions, romances, friendships, and enemies
Methods and reflections	Research process analytical notes

Identifying Codes

The several strategic approaches are used for generating codes.

Repetition

- Reoccured topics, phrases

Metaphor

- Metaphors and analogies

Missing information

- Unsaid, ideas between lines

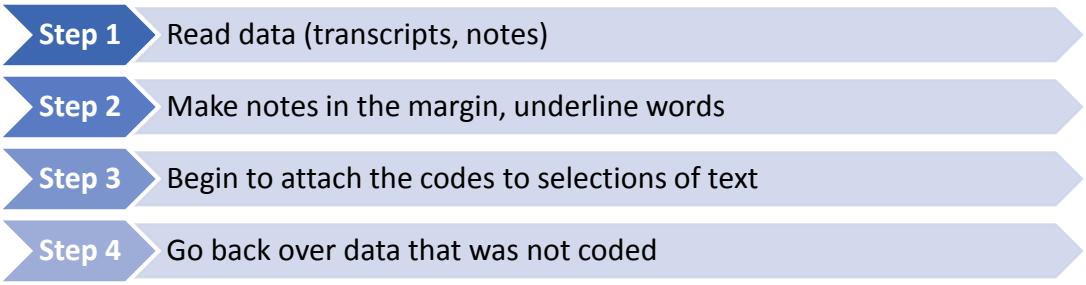
Theory related material

- Data can be coded in relation to theoritical framework

Organising codes

The coding of the transcript usually provides a long list of codes. This list includes the clear definition of the codes used in the research material analysis process. Moreover, codes are sorted based on the thematic sequence. This approach exclude overlaps and repetitions. Moreover, similar codes are grouped under an overarching code. Consistency is preserved during the whole coding process, from generating to organising. Checking and comparing previous codes with new ones avoids inconsistency during the coding phase. The whole coding process consists of four steps, as shown in the Figure 8 beneath.

Figure 8. A coding process steps



STEP 3 DATA ANALYSIS

Making links

Important themes are highlighted by the grouping of data. Moreover, organised data increases the accuracy of comparisons of data, and completeness of conceptual framework.

Two chunks of data can be linked if there is a logical connection between them. The logical connections can rely on two different approaches. First considers links between concepts (variable orientated). Second, follows the time sequence, or in other words, links between events (case orientated). Above all, the logical linkages are driven by the particular research objective.

Tools for exploring linkages

Matrices

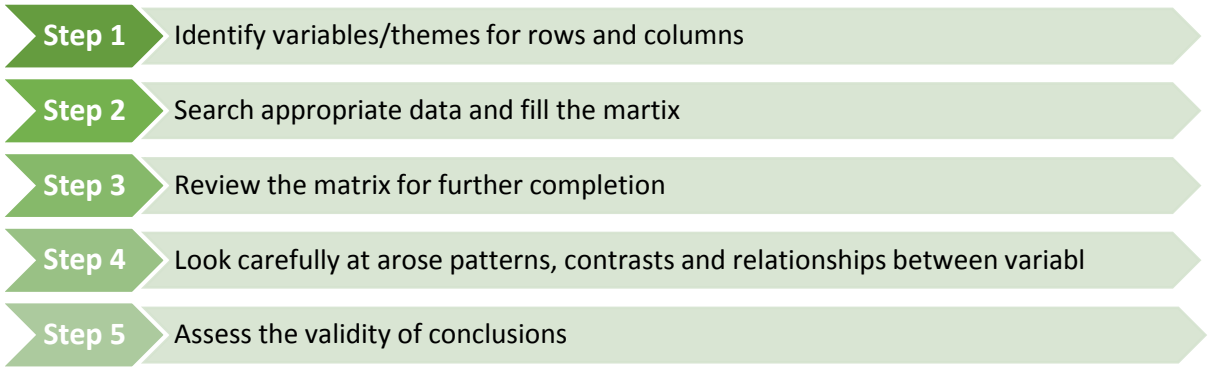
During the analysis of field work matrices are used for finding linkages in data. Collecting all data related to the research theme on one page can be considered an advantage in the analytical process. Generally, column headings are selected from the categories by which the data has been coded. Later on, the cells of the matrix will be filled by the appropriate data.

Several types of matrices are used for data analysis corresponding to the nature of research objective. A **Case-ordered** matrix is utilized for comparison of data collected in different ongoing processes on Georiga. It contributes to evaluate similarities and differences between the cities in the process of SEAP implementation.

A **Time-ordered** matrix helps to see INDC development processes with regards to different eras, such as pre-EU AA, post-EU AA, and after-INDC.

A comparison of data based on different stakeholders brings to the table common and opposite visions, expectations, and ideas regarding mitigation activities, and a **role-ordered** matrix can be used.

Figure 9. Steps in matrix construction



Diagrams

Findings from matrices are further developed by drawing diagrams. Diagrams are the common method to visualize relationships and think analytically with the data.

Flow diagrams are used for displaying time-ordered data and conclusions made from the appropriate matrix. An illustrated sequence of events or ideas can be analysed deeply based on related data.

Linkage maps are used for illustration of linkages between concepts, stakeholders, events and even processes. The arrows used in such kind of diagrams show the direction of relationships and influences among the variable.

A **causal network** illustrates in the diagram relationships between the key themes in the research. The network is drawn in accordance with systematic examination of the data. Hence, this method has an explanatory nature.

Validity and reliability

The validity of the data are checked based on the criteria as shown in the table beneath.

Table 6. Data validity Criteria

Stronger data	Weaker data
Collected later	Collected early
Seen or reported first-hand	Heard second-hand
Observed behaviour	Reports or statements
Fieldworker is trusted	Fieldworker is not trusted
Collected in informal setting	Collected in official setting
Respondent is alone with fieldworker	Respondent is in the presence of others

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