



Climate Financing Barriers and Strategies: The Case of Sri Lanka

Journal:	<i>Journal of Financial Management of Property and Construction</i>
Manuscript ID	JFMPC-12-2021-0069.R1
Manuscript Type:	Research Paper
Keywords:	Climate change, Climate Change Policy Implementations, Climate Finance, Barriers, Strategies, Climate actions

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Abstract

Purpose: Climate change mitigation and adaptation play an important role in overcoming the climate change challenges facing Sri Lanka today. Many initiatives have been undertaken to implement different policies and plans in this regard which require considerable mobilisation of national and international financing. In acquiring climate finance, many barriers can be identified. This paper investigates such barriers to climate financing in Sri Lanka and proposes strategies to address them.

Design/methodology/approach: The qualitative research approach was undertaken in this study by conducting ten (10) semi-structured interviews with experts who are involved in climate change policy implementation activities in Sri Lanka. The collected data were analysed using the content analysis method via Nvivo software.

Findings: The empirical findings unveil six key barriers and the corresponding root causes to climate financing in Sri Lanka. Inadequate domestic funding for climate actions was captured as the dominant barrier in this direction. The study also revealed that barriers and their root causes are interconnected, leading to many financial limitations in implementing climate actions. The importance of playing a leading role by the government and enabling an integrated approach between the private and public sector organisations were identified as key strategies to combat climate finance barriers.

Originality: Despite there being studies focusing on climate change and related policies, limited research has been carried out with regard to climate financing. Within this context, this study makes an original contribution in the area of climate financing with particular reference to a developing country like Sri Lanka. Further, the identification of barriers to climate financing, their root causes and strategies to address them also provides an original contribution to theory and practice.

Keywords: Climate Change Policy Implementations, Climate Finance, Barriers, Strategies

Paper type: Research paper

1.0 Introduction

Earth's climate has constantly been changing over time, attributing to a number of variations all over the world (Intergovernmental Panel on Climate Change [IPCC], 2007; United Nations Framework Convention on Climate Change [UNFCCC], 2018). According to Adedeji, Reuben and Olatoye (2014), the evidence of these climate changes are compelling globally, where the precipitation patterns are changing, sea levels are rising, the whole world is getting warmer day by day, and severe weather events are constantly occurring. Furthermore, the climate change impacts pose a significant aggregate risk to the economy and the countries at large in many ways (Giglio, Kelly and Stroebe, 2020). As per the study by Feulner (2017), there is a huge threat to global food, water and energy security, population growth, peoples' living patterns, agriculture, marine activities, aquaculture etc. as a result of these adverse impacts of climate change. In such context, climate change challenges are looming day by day and overcoming these challenges has become important. In doing so, the implementation of a wide range of policies and plans, which include climate change considerations, are rapidly evolving today across countries, sectors and levels of government (Lesnikowski *et al.*, 2020). When implementing such policies and plans, it is important that the financial status of the country is stronger, since the successful implementation is mainly driven by adequate financial facilities (Hettiarachchi *et al.* 2014). Hence climate finance play a very important role in implementing climate change mitigation and adaptation.

When it comes to Sri Lanka, the country has faced many devastating impacts due to climate change such as the tsunami in 2004 (Nianthi and Shaw, 2015), followed by major flood events and landslides and faces potential similar risks in the future (Wijenayake and Mombauer, 2019; Hettiarachchi *et al.*, 2014; Hewawasam and Matsui, 2019). In managing climate change, the financial strength of the country plays a pivotal role in ensuring that the appropriate policies are implemented successfully (Climate Change Secretariat, 2016). Thus, it is noteworthy to pay more attention on strengthening the financial capacity of the country towards climate change policy implementations. However, at present, many barriers can be identified to the investment in overall climate actions resulting in a number of inefficiencies during the processes (Centre for Environment and Development [CED], 2017). More importantly, lack of financial capacity may restrict the human and operational capacity required for effective policy implementations largely leading to many indirect barriers such as institutional, informational and technical (Giles *et al.*, 2021). Consequently, the country is suffering from many financial limitations in climate action

implementations. Accordingly, the key motive of this paper is to identify the barriers particularly from the point of view of climate finance in the context of Sri Lanka and identify the ways in which these barriers can be overcome.

2.0 Literature review

2.1 Climate finance

As defined by United Nations Framework Convention on Climate Change [UNFCCC] (2021), climate finance mainly refers to local, national or transnational financing which is acquired from the public, private and other alternative sources of financing, seeking to support climate change mitigation and adaptation actions to be performed. As pointed out by UNFCCC (2021), climate finance mainly intends to reduce emissions, reduce vulnerability and enhance the resilience of human and ecological systems to the prevailing climate change challenges. According to Hohne *et al.* (2012), climate finance consists of two main concepts as mitigation finance and adaptation finance where the former refers to financial flows invested to reduce the Greenhouse Gas emissions (GHGs) while the latter refers to financial flows invested to increase the adaptive capacity of humans and ecological systems towards the climate change.

When it comes to the Sri Lankan context, a similar situation can be observed in terms of climate change, where it has become a significantly vulnerable country to climate change, leading to a number of impacts (De Costa, 2017). These impacts mainly include temperature rising, changes in precipitation patterns, sea level rising and increase in extreme weather events. In such a situation, mitigation and adaptation for ever-changing climate change have become an urgent need of the country to overcome the climate change impacts (Adedeji, Reuben and Olatoye, 2014). To date, many institutional actions have been taken in Sri Lanka to formulate and implement different types of policies and plans with adaptation and mitigation responses for climate change (Hewawasam and Matsui, 2019). Needless to say, financial resources can be identified as the most critical amongst the required resources for implementing such climate change policies and plans at any level. More specifically, financial limitations can lead to many other gaps in terms of institutional, technological, informational and many more aspects largely (Giles *et al.*, 2021). In fact, it is important for a country like Sri Lanka, which is still developing, to improve the financial strength to implement different types of policies and plans to deal with the adverse impacts of climate change (Climate Change Secretariat, 2016).

2.2 Barriers to climate financing

At present, countries have tended to practice different mitigation and adaptation actions proposed under the existing policies and plans to combat the adverse impacts of climate change. In doing so, an increased occurrence of major limitations in finance can be identified (CED, 2017), which hinder the implementation of climate change policies and plans, urging the critical need of addressing them.

More importantly, the financial constraints mainly include a lack of funding for the policy implementations, which is the primary issue in most of the developing countries (Tall *et al.*, 2021). More succinctly, lack of funds has limited the execution of climate change responses considerably. This view was further supported by Biesbroek *et al.* (2011) stating that inadequate financial provisions for responsible institutions, including local level agencies and local authorities, has created a barrier in implementing these measures within the country to cope with the severe impacts of climate changes. Indeed, while most of the developing countries are striving to acquire adequate finance for their basic human and infrastructural needs, it is really difficult to afford funding for climate related matters which require significant upfront investments (Timilsina, 2021). Hence, inadequate finance for climate change mitigation and adaptation has become a key challenge today. According to Tall *et al.* (2021), another barrier to investing in implementing different climate actions is the lack of country-level climate-related data and information that can impact the decision to invest. Indeed, robust climate-related data and information need to be available to be embedded into the climate investment planning undertaken by the government and other relevant parties because prior estimation of costs and benefits of implementing particular actions is vital to get the best outcome from them. However, at present, a general absence of such data and tools can be identified hindering the investors' investment decisions (Miller and Swann, 2019). Further strengthening this idea, United Nations Framework Convention on Climate Change [UNFCCC] (2020) mentioned that it is very hard to take the decisions on how much climate finance need to be spent at local level and national level climate action implementations due to the less availability of required data and information in this regard. Hence, it has created a significant barrier to climate finance. The slow rate of releasing the available funds can be identified as another barrier to investing in climate actions towards climate change adaptation and mitigation (Piggott-McKellar *et al.*, 2019). As the world is experiencing a 'climate emergency' (Ripple *et al.*, 2021), the mitigation and adaptation actions cannot come soon enough. Hence this slow rate of

climate finance and funding delays are likely to exacerbate the problem further (Piggott-McKellar *et al.*, 2019).

At the same time, Mahanama, Wimaladasa and Abenayake (2014) asserted that poor collaboration with Non-Governmental Organisations (NGOs) can be identified as another main attribute that leads to financial barriers in implementing climate change policies and plans. Basically, climate change policy implementations have been fragmented across many parties such as government, private-sector organisations, communities, NGOs, and many other parties (Pandey, 2015). When it comes to NGOs, they seem to play an ever more pivotal role in the formation and execution of climate change policies. NGO's provide many financial support schemes to climate change partnerships (Jones, Harvey and Godfrey-Wood, 2016). Thus, the collaboration with NGOs needs to be further strengthened in order to make the financial capacity of the country for climate change mitigation and adaptation stronger. At the same time, the implementation of these climate change policies and plans is not an effort of a single party where a number of stakeholders have been engaged to make them more effective in many ways (Wijenayake and Mombauer, 2019). Thus, a proper collaboration needs to be developed amongst those parties in order to make the policy implementations more effective and efficient (Ampaire *et al.*, 2016). However, most of the developing countries have to face many difficulties in sustaining proper institutional cohesion during the climate change policy implementations (Wijenayake and Mombauer, 2019). As argued by Ampaire (2020), such weakened institutional coordination can lead to the lack of finance for the climate action implementations and inefficient financial management. For example, when considering about investment companies, different constraints can occur during the decision making processes when there is no proper coordination with the other involved parties to climate action implementations (Hafner, James and Jones, 2019). Subsequently, the climate change mitigation and adaptation actions can become more inefficient in performance. Hence, lack of institutional coordination can be regarded as another barrier to invest in these policy implementation activities. Added to this, limited clarity on the government's capital investments has constrained the ability of most of the developing countries to attract required funds for climate actions (Tall *et al.*, 2021). For instance, the relevant parties have not clearly identified where private sector investments are needed in these policy implementations. Thereby it is difficult to get financial supports from the private sector at expected level. According to Healy-Singh (2021), a disconnect can be identified between the parties, especially public and private sectors when it

comes to climate information sharing. These prevailing gaps in communication have been made a significant influence towards clarity on the government's investments towards climate actions. Added to this, less transparency of climate related disclosure and data also can further exacerbate this situation, as per Hafner, James and Jones (2019). Thus, effective institutional arrangements are necessary with a clear focus including who will do what, where, when, and how in this regard, as further noted by Tall *et al.* (2021).

Accordingly, several barriers can be identified in investing climate change policy implementations effectively within the global context.

3.0 Research method

The paper adopts qualitative interview method in investigating the barriers to climate financing in Sri Lanka. When it comes to qualitative research which focuses on any particular phenomenon in greater depth, in-depth interviews can be identified as the most commonly used data collection method because interviews are very interactive where the researcher can expect complete and clear answers from the respondent in their natural settings (Alshenqeeti, 2014). Thus, in-depth interviews were adopted as the data collection technique of this study, where in-depth views and opinions of the respondents are highly acknowledged. More specifically, Semisemi-structured interview technique has been used among the three main categories of interviews (Adhabi and Anozie, 2017) to conduct an the in-depth exploration of the views, opinions and experiences of the experts who are involved in the climate change policy making and implementation activities in Sri Lanka. The respondents were selected based on their knowledge and experience in the field of climate change in the perspective of policy making and implementation levels. These in-depth interviews can be identified as the most commonly used data collection method when investigating any particular phenomenon in greater depth (Alshenqeeti, 2014). Accordingly, ten semi-structured interviews were conducted with the experts who are involved in climate change policy making and implementation activities in Sri Lanka. The profile of the respondents is presented in Table 1. In addition, selected respondents were interviewed using a semi structured interview guideline. The collected data were analysed using the content analysis method via the Nvivo software package (Hilal and Alabri, 2013). During the process, the data sets were transcribed into the written form, the meaningful concepts were identified through the data sets and codes were assigned to the

identified concepts using Nvivo software. The process was repeated until no new concepts or codes are generated and thereby overall conclusions were drawn.

<Table 1>

4.0 Results & Analysis

4.1 Barriers to climate financing in Sri Lanka

This section is the basis for the identification of barriers to investing in implementing different climate change policies and plans in Sri Lanka as per the views of the respondents. [A quick visualisation of the identified barriers that derived through NVivo software can be presented as shown in Figure 1.](#)

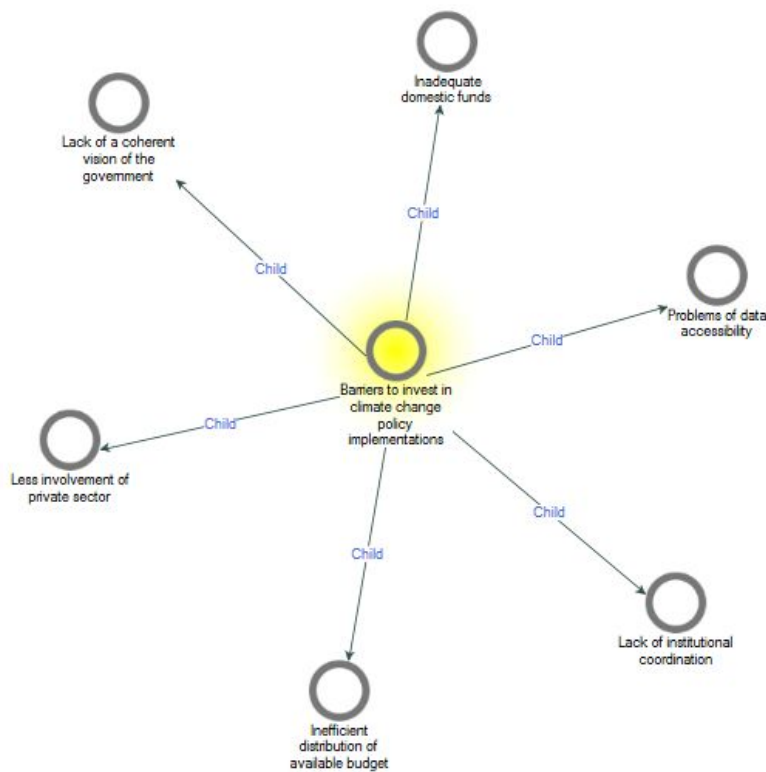


Figure 1: Quick visualisation of identified barriers to climate finance

All the barriers were identified with their root causes which reflect the actual issues prevailing within the country regarding climate finance. The coding structure for the identified barriers through the in-depth interviews can be portrayed as shown in Figure 42.

Name	Files	References
Barriers to invest in climate change policy implementations	10	29
Inadequate domestic funds	8	12
Inefficient distribution of available budget	2	2
Lack of a coherent vision of the government	2	3
Lack of institutional coordination	5	5
Less involvement of private sector	3	3
Problems of data accessibility	4	4

Figure 24: Coding structure for barriers to climate financing in Sri Lanka

According to Figure 12, six main barriers which hinder investing in policy implementation activities towards climate change mitigation and adaptation in Sri Lanka were identified. The majority of the respondents, which is 8 out of 10, pointed out that being a developing country, Sri Lanka is currently suffering from inadequate domestic funds for the climate change considerations and therefore, it can be regarded as the most prominent barrier in this direction. Indeed, climate finance within the country is regrettably unstable since the available domestic funds in this regard are not sufficient for implementing climate actions. By further strengthening the fact, R2 asserted that the targets of these policies and plans are ambitious, covering a broad area at once. Hence, implementing required actions to achieve those targets unquestionably needs higher investments. For instance, R5 commented that “we don’t have adequate as well as improved technologies to implement different climate change mitigation or adaptation actions effectively mainly due to the financial issues”. This was further strengthened by R1 stating that many actions such as waste to energy concept, biogas production etc. are currently following as the ways of reducing CO2 emissions in Sri Lanka where many technologies with heavy investments are required when implementing them. Hence, adequate finance has become a crucial necessity to improve these technological aspects in an advanced manner in order to gain the expected outcomes towards climate change mitigation. Another main concern due to the inadequate domestic funding which was highlighted by R5 and R9 is the lack of resource allocation to conduct research on climate change within the country. It was noted that research into climate change demands multi-disciplinary activities from different subject areas and this will play a foremost role in making the climate change policy implementation activities more fertile. However, as per the respondents, the required resources for these research activities such as laboratories with advanced technologies, research institutions etc. are somewhat lacking within the country mainly due to lack of finance.

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This may have sometimes led to lack of morale among young researchers in getting involved in research into climate change. Such a loss of morale constrains novel and innovative ideas into the implementations of different climate actions. In this context, it is evident that appropriate investments are required when performing different climate change mitigation and adaptation actions successfully, and at present, there are challenges as highlighted by 8 of the respondents. However, sometimes a dedicated budget line has not been allocated for the relevant parties to implement such different mitigation and adaptation actions under the existing policies and plans, as steadily remarked by R1 and R6. Supporting this view, R6 noted that “...there is an allocated budget line for Ministry of Environment but it is questionable whether the available budget is adequate to implement all the required climate actions to reduce the prevailing climate change challenges”. Accordingly, it is apparent that inadequate domestic funds have been created a significant barrier for climate finance within the country. In fact, the problem may be further deepened due to a lack of a coherent vision by the government, which will identify as another barrier in this regard.

Added to this, ‘lack of institutional coordination’ can be regarded as the second important barrier to investing in implementing different climate change mitigation and adaptation measures within the country. R4 insisted the importance of proper coordination among the parties in this process as “There are separate ministries, agencies and other organisations with differentiated focuses under the climate-related matters which are involved in the implementation of different actions proposed through these policies and plans. During these implementations, the collaboration and coordination between these parties are really important to make them successful”. For example, different state agencies and ministries who provide a leadership role for the policy implementations, researchers who provide novel and innovative ideas in this regard, UN agencies, community based societies, NGOs who involve in the consultation activities relating to these policy formulation and implementation etc. can be identified as some examples for the involved parties in these processes, as mentioned by the respondents. However, to date, there is lack of coordination between the involved parties, resulting in weakening of the financial capacity for implementation of policies. Although several parties have been involved in these processes, proper coordination cannot be identified among them which can be captured as one of the root causes under ‘lack of institutional coordination’. Thus, issues in the financial management of such climate action implementations can happen considerably and thereby the continuity of those

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3 implementations can be severely impacted (R10). At the same time, the involvement of different
4 parties in the process has become somewhat less today leading to many financial gaps (R8). It can
5 be considered another root cause for the barrier, 'lack of institutional coordination'. R8 commented
6 that "...the financial support can be gained from different parties such as private sector
7 organisations, NGOs, international organisations etc. to make these policy implementations
8 successful". The respondent (R8) also commented that such investment is unlikely to happen if
9 "there is no proper collaboration or coordination between the parties". Currently, this situation
10 seems to emerge at different sectors within the country. This can be further encouraged by the root
11 cause for the barrier 'lack of a coherent vision by the government' which is 'less priority given by
12 the government towards the climate change considerations'. This will be identified later in this
13 section. Since there is no pressure put by the government in encouraging climate actions in the
14 first place, the parties seem to be reluctant or seem to be not adequately energised to be involved
15 in these processes. Therefore, the content analysis results and the specific comments by the
16 interviewees highlight that there is some degree of commitment 'deficit' and lack of initiation or
17 leadership to see through the institutional coordination process.

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19 Problems of data accessibility has also been highlighted as a barrier in this regard. In fact, as
20 disclosed by R1 and R4, different types of data such as climate-related data, emissions-related
21 data, historical data about the disasters that occurred within the country, monetary values of
22 damages etc. from different sectors are highly paramount in decision-making activities in climate
23 finance. However, currently, accessing those data is somewhat difficult where the related issues of
24 data accessibility can be captured in two ways. Firstly, most of these available data are in different
25 formats which makes the accessibility and integration of those datasets somewhat difficult for all
26 the relevant parties (R1). The technical know-how in this regard needs to be further improved to
27 make the available data easily accessible for all the parties. Secondly, the required data are widely
28 spread and not in one platform where some of those data are not easily accessible for the required
29 parties (R4). As R4 mentioned, "...some organisations have their data in different platforms. So it
30 is somewhat difficult to access them easily when needed". Hence the problems in data accessibility
31 is likely to affect the reliability and the effectiveness of the climate finance decision-making
32 activities. The said problems of data accessibility can worsen further by less coordination between
33 the involved parties, which was mentioned previously as a root cause for 'lack of institutional
34 coordination'.

Two barriers were similarly viewed by the majority of the respondents as the next important barriers to investing in implementing climate change actions in Sri Lanka where the lack of a coherent vision by the government was identified as one of them. R1 insisted that "...government's vision does not accommodate or give high priority for the climate change considerations in an expected level. Sometimes the government's focus shifts to many other matters within the country rather than focusing on climate-related matters. At the same time, when the government changes, the level of priority that is given for the climate change considerations are also changing". That is to say, sometimes the climate change considerations are somewhat neglected resulting in many inefficiencies in overcoming the prevailing and expected climate change challenges. Thus, less priority given by the government for climate change considerations can be regarded as a root cause for the barrier of "lack of a coherent vision by the government". As another barrier to investing in climate change policy implementations, 'less involvement of private sector' was captured by the respondents. More importantly, the private sector has a significant capacity to invest in the different implementations of climate change mitigation and adaptation measures, as agreed by all the respective respondents (R2, R5, R8). For example, many private sector organisations have engaged in different emissions reduction activities like renewable energy production activities, water management activities, the development of different technologies etc. with the intention of reducing possible climate change impacts. However, there is more scope for this involvement to improve further (R2). By endorsing the view, R5 asserted that "...private sector is willing to give the support for the government to reduce the climate change issues with their resources and capabilities. But the recognition and chances given to them to involve in this process are somewhat less today". Therefore, their financial capabilities need to be further identified and improved to make these climate action implementations more successful. For example, R2 mentioned that "we can look at NDCs and identify where the private sector investments are viable and allow the private sector to come and implement them". However, the opportunities given to them by the relevant authorities for involving in the investing in climate change mitigation and adaptation processes are somewhat less today. As a result, the financial support provided by the private sector for climate change mitigation and adaptation measures has a lot of scope to further develop. Indeed, this barrier can also have an influence on one of the root causes for 'lack of institutional coordination', which is less involvement of different parties in the process. Added to this, R2 disclosed that the reduced understanding of the private sector regarding how they can contribute to these policy

implementations can also result in them being less involved in this process. Therefore, the awareness among the private sector also needs to be further enhanced. In truth, the barrier, 'less involvement of the private sector' can be further stimulated by the root cause identified as less priority given for the climate change considerations by the government because if there is no concern for climate change considerations, the parties may not intend to commit to them. As a result, the public-private partnerships also become more unstable when the requirements at the front end of the process are not satisfied.

Inefficient distribution of available budget among the parties is another barrier to investing in climate change policy implementations. R4 stressed that "...although the relevant ministries and other organisations have adequate funding from multilateral donors, international funds, allocated money by the government etc. for particular implementations, the distribution of these available funding among the required parties is somewhat inefficient". Especially, when it comes to the operational level where these required actions towards climate change mitigation and adaptation are implemented, these available budgets can be inefficiently distributed among the relevant parties. Sometimes, as a result, delays may happen when acquiring the funding from the relevant organisations, making the whole implementation activities delayed, as remarked by R7. In this context, inefficient distribution of available budget can be considered as another obstacle to implementing different actions towards climate change mitigation and adaptation as proposed in the said policies and plans. Sometimes, this barrier may be compounded due to the identified root causes of not allocating adequate budget lines for allocated parties as well as less coordination between the involved parties.

Overall, it is evident that "inadequate domestic funds" can be identified as the most coded barrier to climate finance while "inefficient distribution of available budget" can be regarded as the least coded barrier based on the views of the respondents. At the same time, "lack of a coherent vision of the government" and "less involvement of private sector" are coded in similar times by the respondents. Accordingly, the level of importance of each and every barrier can be determined based on the number of times that barrier has been coded and it can be clearly presented with different colours with the use of NVivo software, as shown in Figure 3.

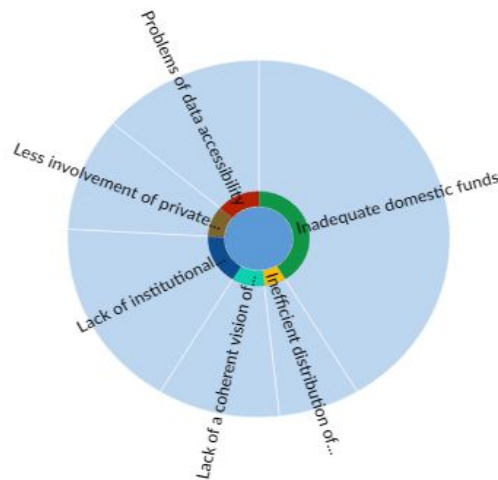


Figure 3: Comparison of the barriers based on the number of references

On the whole, it is evident that different barriers can be identified which can affect investing in the implementation of climate actions towards successful climate change mitigation and adaptation in Sri Lanka. In summary, the identified barriers and their root causes can be presented with their interrelationships in Figure 34.

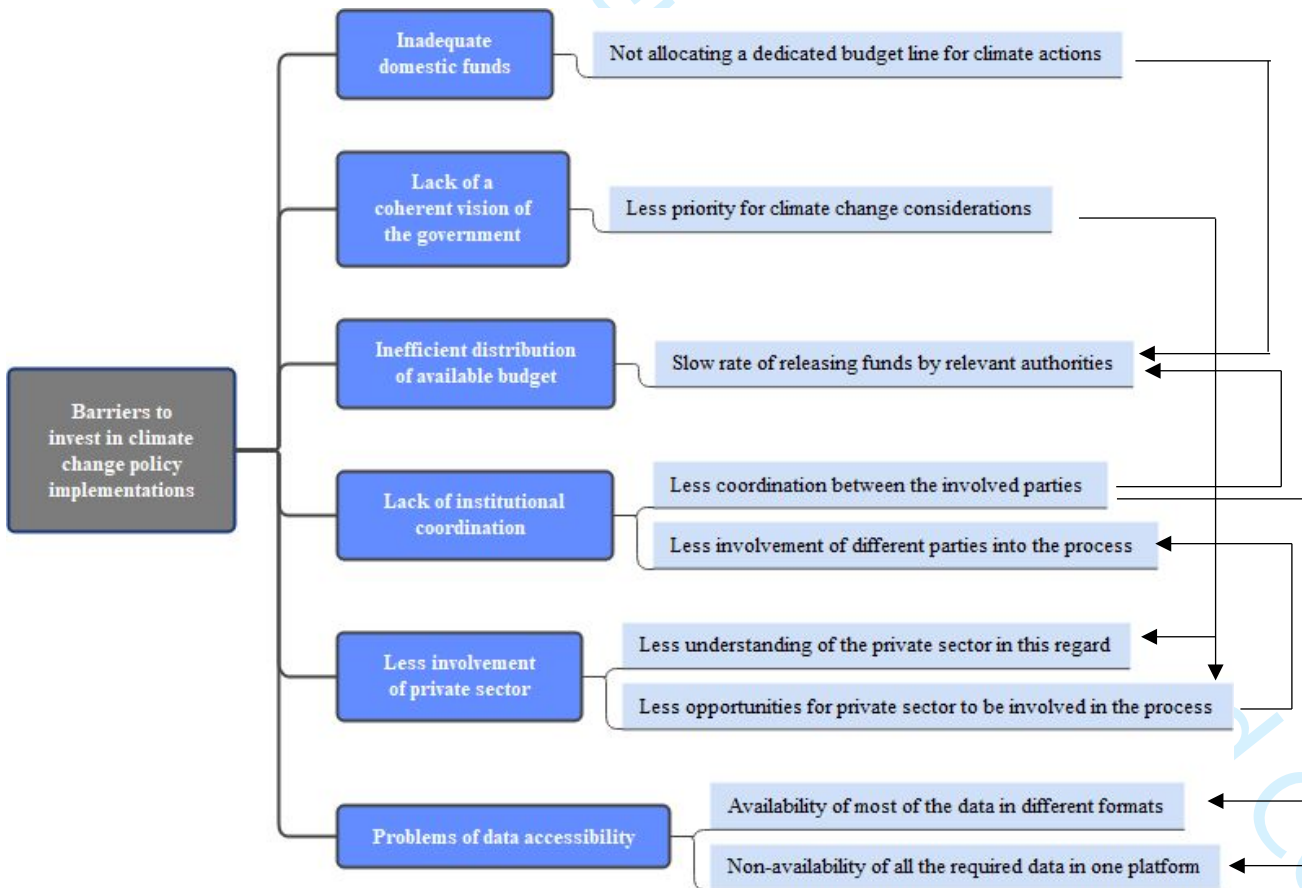


Figure 42: A summary of barriers, their root causes and the interrelationships among them

5.0 Discussion

The existing literature highlights that for the successful implementation of different policies and plans towards climate change mitigation and adaptation, climate finance has become an important topic to be considered. Hong, Karolyi and Scheinkman (2020) revealed that climate finance mainly intends to reduce emissions, reduce vulnerabilities and enhance the resilience of the communities of the countries. When investing in implementing climate actions, a number of barriers can be identified making them inefficient in performance, as per CED (2017). The situation in the Sri Lankan context to a certain extent mirrors the global context, where different barriers create many obstacles in implementing climate change policies and plans.

Based on the prevailing literature, six key barriers to climate financing were identified. Although those barriers were not country-specific, it was evident through the analysis of interview findings that they were also applicable within the Sri Lanka context as well. However, the findings revealed a unique set of barriers and their root causes specific to the country. Tall *et al.* (2021) identified issues in the availability of funding as a barrier that is significant in most of the developing countries. The data analysis conducted in this research also identified that there was an inadequacy of domestic funds as indicated by the root cause; not allocating a dedicated budget line for climate actions. It was identified as the most critical issue for investing in climate actions in Sri Lanka. This process is exacerbated by the lack of a coherent vision of the government. Lack of institutional coordination was captured as the second critical barrier by the respondents where less coordination between involved parties and less involvement of different parties into the process were highlighted as the root causes. As identified by Ampaire (2020), such improper institutional coordination can lead to inefficient financial management and affect the process of climate change policy making and implementation. Lack of climate-related data and information was identified as another barrier, by Tall *et al.* (2021). Similarly, problems of data accessibility driven by root causes, availability of most of the data in different formats and non-availability of all the required data in one platform, have become major constraints in climate change policy implementations in Sri Lanka. At the same time, less involvement of the private sector was identified as another newly added barrier by the respondents. Less understanding of the private sector and fewer opportunities available for the private sector to be involved in the process were identified as the respective root causes. In addition, 'inefficient distribution of available budget' was captured as another significant barrier. This was responsible for the slow rate of releasing available funds which creates

a major obstacle in implementing climate actions proposed under the said policies and plans successfully in Sri Lanka and it was mirrored in literature as well, as per Piggott-McKellar *et al.* (2019).

Having identified the barriers to climate financing in Sri Lanka, several strategies were proposed by the study in order to overcome the said barriers and their root causes. Having an integrated approach to mobilise finance was strongly suggested by the majority of the respondents: R2, R3, R4, R7 and R9. All of them were in the view that the government is the key candidate in playing a leading role in integrating actions on climate finance. Being a developing country facing funding difficulties, Sri Lanka will be highly benefitted from such an integrated approach for mobilising finance for the climate change policy implementations. In doing so, mainstreaming climate change considerations into national development plans as highlighted in Watkiss and Cimato (2018) and Mertz, Halsnaes and Olesen (2009) is an important way to facilitate the integrated approach in overcoming all identified barriers to invest in implementing climate change policies and plans. It is another common strategy proposed by the respondents, R2, R4, R6 and R9. Indeed, climate change should not be a standalone matter to be considered. Various economic, environmental, social, cultural and many other aspects need to be considered and embedded with climate change considerations and thereby it will lead to adequate and effective allocation of budget for them, as per R6. R4 also agreed on the point stating that the "...government should identify climate change as one of the critical challenges facing Sri Lanka nowadays". Thereby, the priority needs to be given to the climate change considerations by the government to a considerably higher level than before with the main concern towards allocating adequate budget line and they should put their foot forward to implementing these policies and plans effectively. The argument was further strengthened by R1 stating that it is paramount to insist the value of investing in climate change mitigation and adaptation measures by the government as a way of poverty alleviation within the country. It is mainly because the increased occurrence of climate change challenges leads to social inequalities and adds to further marginalisation of communities within the country. It is therefore important to address this problem of worsening climate change to overcome the challenges with the intention of reducing social inequalities, as highlighted by Climate Change Secretariat (2016). Thus, it is of utmost importance to invest in climate actions in a country like Sri Lanka. At the same time, promoting private sector investments can be identified as another major initiative in empowering climate finance within the country where private sector involvement has the potential

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3 to be further energised. It was further endorsed by Hettiarachchi *et al.* (2014) as well. As
4 commented by R2, "...at the moment, private sectors are coming up with their own investment
5 strategies for different focuses", which is targeting a raft of agendas. Supporting that view, R8
6 stressed that private sector organisations have a significant capacity to allocate budgets for these
7 commercial agendas which are indirectly linked to reducing the climate change impacts. So that,
8 the private sector organisations need to be allowed to invest in climate change mitigation and
9 adaptation measures by identifying where the private sector investments are more viable.

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16 Strengthening the institutional coordination can be regarded as another major strategy to be
17 followed to make the financial support for climate change policy implementations stronger. It was
18 also captured by the majority of the respondents, R2, R4, R5, R7 and R8. R4 commented that
19 "...the coordination among the relevant parties should be further improved to get the best outcome
20 of those parties into the climate action implementations in many ways like their knowledge,
21 financial supports, resources". All the respective respondents acknowledged that having proper
22 coordination with the active involvement of different parties is vital to acquire financial support
23 from different parties and effectively distribute them among the relevant people who are involved
24 in the policy implementation activities. Added to this, R8 strongly believed that having a time plan
25 to achieve the short-term and long-term goals established in these policies and plans will assist in
26 making the funding distributions among the parties more efficient. Engaging with different
27 international parties was pointed out by several respondents, R2, R8 and R10 as another strategy
28 for enhancing climate finance within the country. As indicated by R2, internationally a lot of
29 supportive channels can be identified such as different specific climate funds, multilateral
30 development banks, and many other philanthropic funding schemes. The literature also found
31 schemes such as climate funds, multilateral, bilateral, regional and national development banks
32 etc. (Miller and Swann, 2019). Although Sri Lanka is currently benefitting from such international
33 funding sources, it needs to be further improved since the country is currently lacking with
34 domestic funding to accomplish the targets of the climate change policies and plans (Tam, 2019).
35 As further added by R8, such international collaborations will help to gain not only financial
36 support, but also many other valuable opportunities which can be assisted in dealing with climate
37 change challenges within the country. At the same time, R8 highlighted another special strategy
38 in this regard, which is encouraging the contribution of NGOs for the climate change policy
39 implementation activities. As believed by R8, NGOs play a pivotal role in making these policy
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implementation activities success and at present, many NGOs have been involved in these processes to some extent. However, this contribution of NGOs needs to be further improved as strongly commented by R8 since they have several avenues open to access financial support for these activities. Therefore, it can be identified as an important strategy to be followed in a situation where climate finance is significantly lacking.

Also, enhancing the updated knowledge further with a more global perspective was identified by respondents, R5 and R9 as another strategy since the updated knowledge is crucial in decision-making processes in policy implementation activities. When it comes to financial decision-making as well, the updated knowledge regarding the climate-related issues and their level of occurrence, possible challenges that can occur than before, statistical information and so on are paramount. That means, the existing knowledge regarding climate-related matters needs to be updated continuously with time to make decisions appropriately, as highlighted in a recent study by Wijenayake and Mombauer (2019) as well. If the knowledge is not updated in line with what prevails globally, the reliability of the decision-making processes can become somewhat problematic. Hence, the knowledge should be updated from time to time in making the financial allocations for the climate action implementations effective and efficient. In line with the above strategy, awareness needs to be created at different levels and different sectors that can provide financial support by ensuring their active involvement in this process, as per R4. For example, R4 noted that "...the updated knowledge and awareness need to be done for private sectors by highlighting their capacity to be involved in the process and make them successful". Such deep understanding will direct those parties to contribute to these climate action implementations in an active manner and thereby many opportunities will arise to acquire funds from them in many ways. Hence, creating awareness among the involved parties can be regarded as another main strategy to be followed in strengthening the financial capacity.

Accordingly, several strategies can be identified to overcome the identified barriers. In a summary, the identified strategies and their contribution to overcoming the barriers can be presented as in Figure 35.

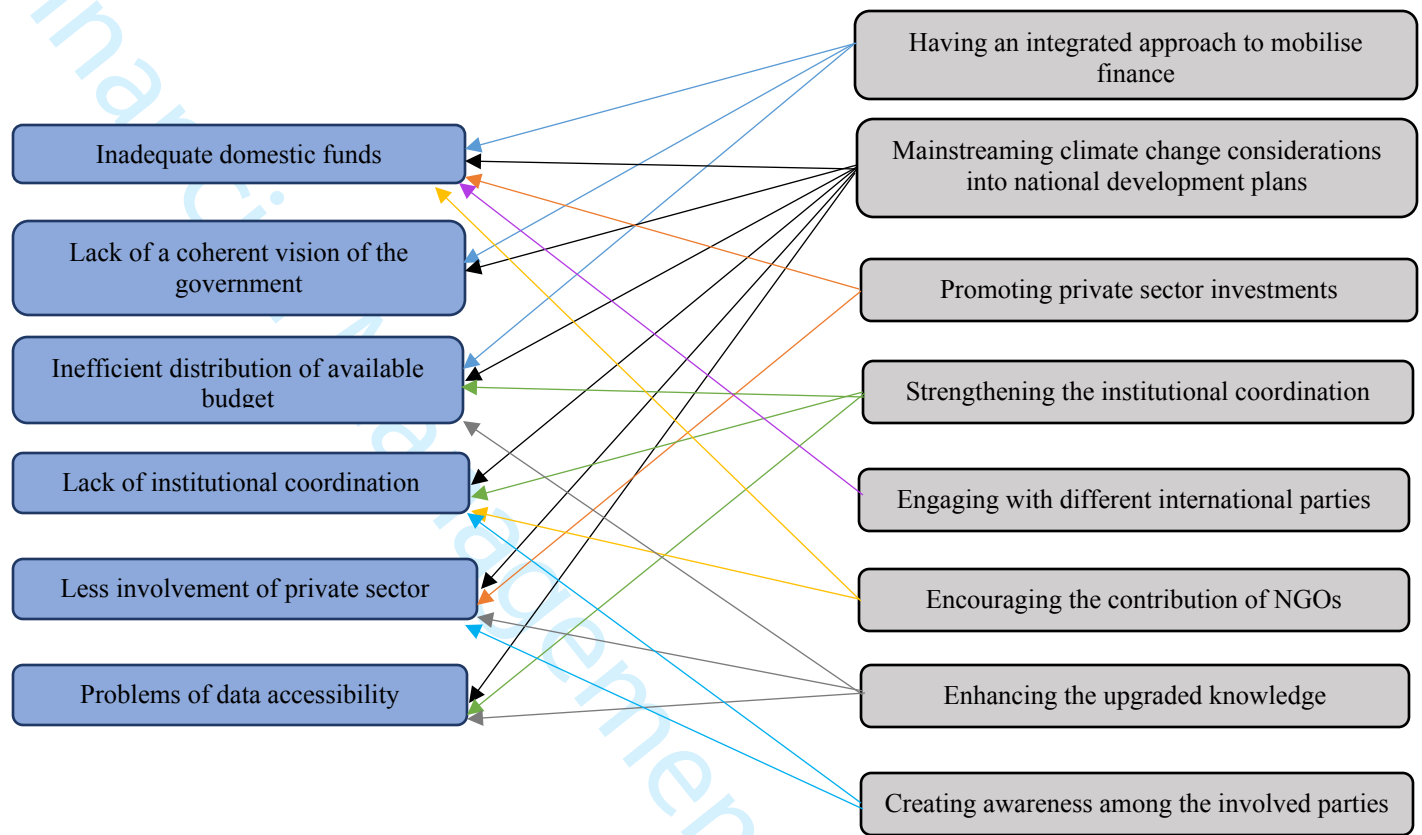


Figure 53: Strategies to overcoming the identified barriers

The study provides some context and contributory factors for the barriers in investing in implementing climate actions in Sri Lanka. Being a developing nation, Sri Lanka faces different financial limitations which leads to many other institutional, technological, and informational gaps during the process, as highlighted similarly in a recent study by Giles *et al.* (2021). Thus, the existing financial limitations need to be properly overcome through appropriate strategies with the involvement of relevant parties to enhance the financial capacity of the country towards climate change policy implementations.

6.0 Conclusion

Climate finance can be regarded as one of the major factors that impact climate change policy making and implementation. Hence identifying climate finance, its goals and the process is important in climate change policy implementation. Accordingly, this study investigated the barriers to climate financing in Sri Lanka and appropriate strategies to address them.

The extensive review of the literature revealed the barriers in general as applicable within the global context. However, the analysis of interviews conducted in Sri Lanka shows that, while most of the barriers tend to mirror the global context, the specific conditions prevailing in the country leads to some of the nuanced findings. Therefore, a specific set of barriers and their root causes can be identified within the Sri Lankan context, so that the climate finance strategies can be better organised. The main barriers identified through this study include very low priority for allocating funds for climate change implementation, lack of a coherent vision by the government, inefficient distribution of available budget, lack of institutional coordination, less involvement of the private sector and problems of data accessibility. Different root causes were identified for each barrier where all the barriers, their root causes and the interrelationships among them are clearly presented in Figure 4.

It was established that the Government should play a leading role in enabling an integrated approach between the private sector organisations, public institutions and the community in facilitating climate finance. Thus, the climate change considerations should become one of the major priorities of the country considering frequent natural hazards and the impacts on communities and their livelihoods. At the same time, it is obvious that proper institutional coordination is also paramount in acquiring finance from different ways for the implementation of climate change mitigation and adaptation measures. In here, different collaborative plans with key parties and institutional mechanisms for coordination of the relevant parties should be well established to perceive the strong public and private institutional support in this direction. Indeed, this will help to gain financial support from many parties at different levels and thereby these policy implementations will become more effective and efficient than before. Moreover, strong institutional coordination and better governance will contribute to overcome the problems of data accessibility as well. It was observed that this barrier runs through the organisations involved in the supply chain in climate finance and it inhibits the efficiency of policy making and implementation. More specifically, the data needs to be freely available for all parties who are involved in policy making and financial management activities through a common platform. When there is proper institutional coordination, the data accessibility and thereby data shareability among the parties become more stable with the active involvement of the parties in the process. Accordingly, in order to overcome the identified barriers, several strategies were proposed including having an integrated approach to mobilise finance, mainstreaming climate change

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3 considerations into national development plans, promoting private sector investments,
4 strengthening the institutional coordination, engaging with different international parties,
5 encouraging the contribution of NGOs, enhancing upgrading knowledge and creating awareness
6 among the involved parties.
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11 However, overcoming the identified barriers is quite challenging, especially for a country like Sri
12 Lanka which is still developing. At the same time, identifying and taking the climate finance goal
13 higher up in the agenda towards climate change mitigation and adaptation is extremely challenging
14 (Withanachchi, 2019). Putting this at the top of the agenda means that the areas where there is
15 commitment deficit and capability and capacity gaps within the supply chain of climate finance
16 can be investigated in more detail. More specifically, the degree of concentration of climate change
17 risk in portfolios in relevant organisations, especially the financial institutions and investors needs
18 to be more explored to see to what extent the climate finance matters are taken into consideration
19 within the country. From this, the relevant authorities should try to better manage their financial
20 allocations towards making the country's climate financial stability strong. In a such context, the
21 relevant parties who are involved in the climate change policy implementation processes should
22 focus on how the prevailing barriers in climate finance can be overcome and how best they can
23 contribute in doing so. Further, the operational level at which these different climate actions are
24 implemented can be nurtured by strong leadership with required financial support. More
25 importantly, this study will provide the basis for investigating the way of applying the identified
26 strategies at different levels to enhance the financial strength of the country towards climate change
27 mitigation and adaptation in more detail, as the future research directions of the study. Further, a
28 deeper insight on how the different parties like private sector, organisations, international level
29 organisations, NGOs, etc. can contribute separately in ensuring the climate finance stability within
30 the country needs to be gained where many novel avenues for research studies will be widely
31 opened. Accordingly, the proposed strategies can be assisted by the respective personnel who are
32 involved in these processes to make the climate change policy implementations effective and
33 efficient. Overall, the knowledge generated through this study will contribute to enhancing the
34 existing knowledge on climate finance with particular reference to the context of Sri Lanka, by
35 allowing to validate the findings into other developing nations as well while opening many more
36 avenues for future research studies, as the future research directions of the study. At the same
37 time, the current study significantly contributes to practice as well by assisting the respective
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personnel who are involved in the climate change policy making and implementation processes to get a broader understanding about what the barriers are to climate finance at the moment and how the proposed strategies can be applied to overcome them. Ultimately, the study makes a remarkable contribution towards making the climate change policy making and implementation activities in Sri Lanka effective and efficient.

7.0 References

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Appendices

Table 1

The Table should come under the Section 3 as labelled in the article

Table 1: Profile of the respondents

Respondent	Designation	Work Experience (years)
R1	Representative, International Union for Conservation of Nature (IUCN)	35
R2	Climate Finance Advisor, The Commonwealth Secretariat	17
R3	Assistant Director, District Disaster Management Division	15
R4	Senior Manager (Climate Change Adaptation and Resilience) of a non-profit organisation	18
R5	Assistant Director, Disaster Management Center	12
R6	Disaster Risk Management Specialist, World bank	21
R7	Senior Lecturer specialized in Agricultural Engineering	16
R8	Senior Lecturer specialized in Sustainable Development	8
R9	Assistant Director of a Climate Project	18
R10	Senior Lecturer specialized in Urban and Regional Planning	15

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Author(s') Response to Reviewers Form

Manuscript ID: JFMPC-12-2021-0069

Referee 1	
A good topic - Appropriate methodology and analysis tool used.	Thank you very much for the comment.
Limited to figure 1 as a single visual output. The Nvivo software has the ability to show more visual and focused outputs. Should consider including more to help support the analysis	More visual outputs from Nvivo software have been included in Section 4 to address the reviewer's comment.
Should table 1 be on page 6 where it is discussed and not in appendices? The appendices is not referenced in section 3, nor is an appendix needed.	Table 1 should come under Section 3. It has already referenced in Section 3 and attached as an appendix.
Section 4 'Results' title ought to be 'Results & Analysis'	The title of Section 4 has been changed accordingly to address the reviewer's comment.
Figure 2 is found on page 11 but mentioned only mentioned page 18? - Confusing	The relevant figure (Now it is Figure 4) has been referenced in Section 4.1 as well to avoid the confusions.
Referee 2	
A very good paper with relatively few changes required.	Thank you very much for the comment.
Yes. The paper is original - can it's contributions to both literature and potential practice be emphasized further?	The contribution of the study to both theory and practice has been discussed more in conclusion section (Section 6) to avoid the confusions.
Significant work appears to be included in the paper, with many contemporary works cited. Are there other works that specifically consider the barriers of climate finance outside of the Sri Lanka context that can be cited?	Some other works on barriers to climate finance have been cited with more details in Section 2.2 to address the reviewer's comment.
The methodology section could benefit from further elaboration on the method choices made. The applicability of the method interviews, the benefits they had in supporting this research agenda and how the participants were selected.	The methodology section (Section 3) has been further strengthened by adding more details on the method choices.
This could be developed further with a greater focus on how the results can influence the research agenda going forward and any recommendations for future research.	The way of how the research agenda is going forward has been discussed with several recommendations for future research directions in conclusion section (Section 6) to address the reviewer's comment.
Generally the paper reads well and flows effectively. Some points throughout could be a little more succinct and so a proof read would be of benefit.	Proofreading was done to enhance the quality of the language of the paper.

Please expand table as necessary

Please include this completed table in your resubmission as a document for review