



**Katowice Committee on impacts of the
implementation of response measures**

5 October 2022

**Inputs to the technical assessment component of the first
global stocktake on the impacts of the implementation of
response measures**

Updated synthesis report by the KCI

I. Introduction

A. Mandate

1. At their fifty-sixth sessions, recalling relevant decisions,¹ the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) requested the Katowice Committee of Experts on the Impacts of the Implementation of Response Measures (KCI) to prepare by 31 August 2022, with the assistance of the secretariat, an updated synthesis report reflecting the relevant work of the forum and its KCI as input to the technical assessment component, which started at these sessions, of the global stocktake.²
2. The global stocktake may take into account, as appropriate, efforts related to the work of the CMA that address the social and economic consequences and impacts of response measures.³
3. The CMA invited the relevant constituted bodies and forums and other institutional arrangements under or serving the Paris Agreement and/or the Convention to prepare for the technical assessment, with the assistance of the secretariat, synthesis reports on information in their areas of expertise.⁴
4. In accordance with activity d of the workplan of the forum and its KCI,⁵ the forum prepares information for the technical assessment component of the global stocktake related to the impacts of the implementation of response measures⁶ and forwards an outcome document for consideration in the technical assessment of the global stocktake.

B. Scope of the synthesis report

5. In accordance with decisions 19/CMA.1, 4/CMA.2 and 23/CMA.3, this report synthesizes the work of the forum and its KCI since the adoption of the Paris Agreement, guided by the questions prepared by the Chairs of the subsidiary bodies,⁷ related to:

(a) The current state of, and progress towards enhancing understanding and addressing the impacts of, the implementation of response measures;

¹ Decisions 4/CP.25, 4/CMP.15, 19/CMA.1, 4/CMA.2 and 23/CMA.3.

² FCCC/SBSTA/2022/6 para. 75, and FCCC/SBI/2022/10, para. 130.

³ Decision 19/CMA.1, para. 6(b)(i).

⁴ Decision 19/CMA.1, para. 24.

⁵ See annex II to decisions 4/CP.25, 4/CMP.15 and 4/CMA.2.

⁶ Decision 19/CMA.1, paras. 8 and 24.

⁷ The revised non-paper on preparing for the first global stocktake, prepared by the Chairs of the subsidiary bodies, is available at https://unfccc.int/sites/default/files/resource/REV_Non-paper_on_Preparing_for_GST1_forSBs_15Sept.pdf.

(b) Good practices and challenges in understanding and addressing the impacts of the implementation of response measures;

(c) Opportunities to further enhance understanding and address the impacts of the implementation of response measures.

II. Current state and progress towards enhancing understanding and addressing the impacts of the implementation of response measures

A. Efforts towards enhancing understanding and addressing the social and economic consequences and impacts of response measures

6. Article 4, paragraph 15, of the Paris Agreement recognizes that Parties may be affected not only by climate change but also by the impacts of the measures taken in response to it, and that Parties shall take into consideration, in the implementation of the Paris Agreement, the concerns of Parties with economies most affected by the impacts of response measures, particularly developing country Parties.

7. Parties have been working under the forum to enhance understanding and address the impacts of the implementation of response measures. In addition, the KCI has supported the work of the forum to perform its functions as agreed by decision 7/CMA.1 and to implement the workplan as agreed by decision 4/CMA.2.

8. The activities that contribute to enhancing the understanding and addressing the impacts of the implementation of response measures can be grouped into four categories:

(a) **Knowledge products** to enhance capacity and build awareness through technical papers, case studies, guidelines, etc.:

(i) A technical paper containing guidance to assist developing country Parties to assess the impact of the implementation of response measures, including guidance on modelling tools;⁸

(ii) A technical paper titled, “Enhancing capacity and understanding of Parties, through collaboration and input from stakeholders, on the assessment and analysis of the impacts of the implementation of response measures to facilitate the undertaking of economic diversification and transformation and just transition” (hereinafter referred to as the technical paper on capacity-building);⁹

(iii) A technical paper titled, “Facilitating the development, enhancement, customization and use of tools and methodologies for modelling and assessing the impacts of the implementation of response measures, including identifying and reviewing existing tools and approaches in data-poor environments, in consultation with technical experts, practitioners and other relevant stakeholders” (hereinafter referred to as the technical paper on tools and methodologies);¹⁰

(iv) A database for existing tools and methodologies for modelling and assessing the impacts of the implementation of response measures (hereinafter referred to as the database);¹¹

(v) A draft compilation of concrete examples on country-driven strategies and best practices on just transition of the workforce and creation of decent work and quality

⁸ FCCC/TP/2016/4.

⁹ Available at <https://unfccc.int/documents/614633>.

¹⁰ Available at <https://unfccc.int/documents/614632>.

¹¹ Available at <https://unfccc.int/documents/274695>.

jobs and on economic diversification and transformation,¹² which will be finalized prior to KCI 7;

(vi) A draft technical paper titled, “Assessing the impacts of potential new businesses and industries resulting from the implementation of response measures” (hereinafter referred to as the draft technical paper on new businesses and industries),¹³ which will be further considered by the KCI at its seventh meeting;

(vii) The “Draft technical paper on identifying and assessing the impacts of the implementation of response measures taking into account intergenerational equity, gender considerations and the needs of local communities, indigenous peoples, youth and other people in vulnerable situations” (hereinafter referred to as draft technical paper on impacts on vulnerable groups),¹⁴ which will be further considered by the KCI at its seventh meeting;

(b) **Workshops**¹⁵ to enhance capacity and build awareness through the exchange and sharing of experience and best practices:

(i) An in-forum training workshop on the use of economic modelling tools related to the areas of the work programme;

(ii) A workshop on sharing views and experiences on “economic diversification and transformation” and “just transition of workforce and creation of decent work and quality jobs” in the context of sustainable development;

(iii) Regional awareness creation workshops on existing tools and methodologies to maximize the positive and minimize the negative impacts of the implementation of response measures;

(iv) Two regional workshops on tools and methodologies for modelling and assessing the impacts of the implementation of response measures¹⁶ to implement activity 3 of the workplan of the forum and its KCI;

(v) A workshop to implement workplan activities 3, 4 and 11;

(vi) A workshop to implement workplan activity 9;

(c) **Technical expert meetings**¹⁷ to exchange information with a view to recommending specific actions:

(i) Exchange of information, sharing experiences, case studies and best practices in accordance with workplan activities during KCI meetings;

(ii) Technical expert meetings for sharing experiences, case studies and best practices related to areas of the work programme of the forum;

(d) **Meeting report of the KCI** to document progress on various activities undertaken by the KCI.

9. The technical papers and database developed by the KCI provide information for enhancing the understanding of ways to assess and analyse the impacts of the implementation of response measures to facilitate the undertaking of economic diversification and transformation and just transition.

10. The paper on capacity-building explains how climate policies interact within the economy and translate to social, economic and environmental impacts; contains possible indicators that can be used to measure and assess the economic and social impacts of a climate

¹² KCI document KCI/2022/6/5, annex.

¹³ KCI document KCI/2022/6/6.

¹⁴ KCI document KCI/2022/6/7.

¹⁵ More information available at <https://unfccc.int/topics/mitigation/workstreams/response-measures/workshops-and-events>.

¹⁶ See <https://unfccc.int/event/forum> WPactivity 3, and https://unfccc.int/event/RM_regional_workshop_Senegal_2022.

¹⁷ More information available at <https://unfccc.int/topics/mitigation/workstreams/response-measures/workshops-and-events>.

policy; and includes some possible direct, indirect, domestic and cross-border impact areas of selected climate mitigation measures, such as the removal of subsidies for carbon-intensive goods and services, subsidies for low-carbon goods and services, carbon trading, green tariffs and carbon border adjustments.

11. The paper on capacity-building also included an overview of methodologies and a step-by-step process for assessing and analysing the impacts that can facilitate economic diversification and just transition.

12. The technical paper on tools and methodologies and the accompanying database were developed on the basis of the technical paper on capacity-building and both collectively provide detailed information about a number of existing tools and methods available to be enhanced, customized and used for modelling and assessing the impacts of the implementation of response measures, thereby helping to lower the information barrier faced by potential users of such tools and methods. The database was compiled through stakeholder interactions with the authors and developers of the tools and methods via an online survey.

13. To encourage the effective use of the database by Parties and stakeholders, the technical paper on tools and methodologies includes a selection process that supports Parties and stakeholders in identifying the most appropriate tools and methods for their context via three overarching steps:

- (a) Shortlist available tools and methods using general criteria;
- (b) Narrow the shortlist further using user specific criteria;
- (c) Compare the detailed summaries of the possible tools and methods.

14. The draft compilation of concrete examples provides 26 and 15 examples of country-driven strategies for just transition and economic diversification respectively. These examples included projects, programmes and policies covering diverse sectors (e.g. agriculture, energy, manufacturing, mining and transport) and bringing forward challenges and lessons learned from experiences implementing strategies to maximize positive and minimize negative social and economic impacts.

15. The draft technical paper on new businesses and industries defined a number of new and emerging industries and businesses in the context of deep decarbonization efforts; shortlisted four industries on the basis of the selected criteria; and analysed their social, economic and environmental impacts. Shortlisted emerging industries and businesses included carbon capture and storage, hydrogen fuels, and digitalization and artificial intelligence. The paper explores ways to maximize positive and minimize negative impacts of these emerging industries and businesses.

16. The draft technical paper on impacts on vulnerable groups provides a preliminary summary of impacts of selected mitigation policies, such as phasedown of coal and removal of inefficient subsidies, renewable energy, and increasing forestry, on vulnerable peoples, intergenerational equity and gender.

17. The regional workshop on activity 3 (see para. 8(b)(iv) above) addressed regional needs in Latin America and the Caribbean and small island developing States, and facilitated the development, enhancement, customization and use of tools and methodologies for modelling and assessing the impacts of the implementation of response measures, including identifying and reviewing existing tools and approaches in data-poor environments, and acknowledged the similar work being carried out by the KCI. The workshop was supported by technical experts, practitioners and other stakeholders. Participants benefited from case studies presented by experts to explain the impacts of climate policy on the region or a country in the region using different tools. Both qualitative and quantitative tools and methodologies were presented. The experts also shared their experience of undertaking studies in data-poor environments. Participants benefited from information related to various technical support programmes, including those offered by the United Nations Development Programme and the International Labour Organization to undertake the assessment of impacts of climate policies.

18. To create awareness of existing tools and methodologies and to promote their use to facilitate economic diversification and transformation, and just transition of the workforce

and creation of decent work and quality jobs by Parties, five regional workshops¹⁸ were organized to address regional issues and to share relevant case studies.

19. Parties also organized an in-session training workshop on using economic modelling tools.

20. To support the implementation of the workplan by the forum, several technical expert meetings were organized that were also open to the public. These meetings covered the topics of tools and methodologies for assessing the impacts of the implementation of response measures, economic diversification and transformation, and just transition of the workforce and the creation of decent work and quality jobs.

21. These technical expert meetings presented, among other things, case studies, exercises and experience in some countries. On the topic of methodologies for assessing the impacts of the implementation of response measures, these included a methodology to assess the gender impacts of the strategies, programmes, projects or measures, and case studies that assess the macroeconomic impacts of response measures.

22. The workshop on activities 3, 4 and 11 (see para. 8(b)(v) above) provided a space for Parties and stakeholders to share experience and best practices on these activities. Two Parties presented their experience with assessments of co-benefits of their climate change policies and programmes.

23. Another workshop, on workplan activity 9 (see para. 8(b)(vi) above), was organized during the fifty-sixth sessions of the subsidiary bodies. Experts and stakeholders presented their views on the impacts of the implementation of response measures from the perspective of youth and children, women, indigenous peoples, local communities and workers. The importance of taking these perspectives into account when assessing the impacts was highlighted by the presenters. Three Parties presented their experience identifying and assessing the impacts, including taking into account gender equality and the perspectives of local communities.

24. One KCI side event was organized during the fifty-sixth sessions of the subsidiary bodies with the objective to enhance participants' understanding of the impacts of mitigation actions by using various tools and methodologies, and to introduce the work of the KCI to participants. The KCI technical papers on capacity-building and on tools and methodologies were presented.

B. Efforts towards enabling just transition and economic diversification in developing country Parties

25. The secretariat prepared the following:

(a) A technical paper on the concept of economic diversification in the context of response measures;¹⁹

(b) A technical paper on just transition of the workforce and the creation of decent work and quality jobs.²⁰

26. In addition, a technical paper on capacity-building included specific indicators that can be used to assess the impact of the implementation of response measures to facilitate economic diversification and transformation and just transition.

27. All five regional awareness creation workshops included case studies and lessons learned in using tools and methods to undertake just transition and economic diversification.

28. Two virtual technical expert meetings were organized: one for practical approaches to just transition of the workforce and creation of decent work and quality jobs, and one for economic diversification and transformation. At these meetings experts shared their views,

¹⁸ More information available at <https://unfccc.int/topics/mitigation/workstreams/response-measures/workshops-and-events>.

¹⁹ FCCC/TP/2016/3.

²⁰ FCCC/TP/2016/7.

challenges and lessons learned while implementing or supporting countries in their economic diversification and just transition initiatives.

C. Policies to enhance international cooperation

29. The technical paper on capacity-building mapped relevant stakeholders and their work and identified possible collaborations with stakeholders to enhance capacity on assessing and analysing the impacts to facilitate undertaking economic diversification and transformation and just transition.

30. Further, on the basis of its technical work, the KCI made a set of recommendations for consideration by the forum,²¹ which among other things identified policy recommendations to enhance international cooperation:

(a) Encourage Parties to foster international cooperation to identify and share best practices and experiences of countries that have successfully diversified their economies;

(b) Encourage the identification of barriers, including domestic and non-domestic barriers, along with ways in which the international community could facilitate sustainable economic development of all Parties;

(c) Encourage Parties to establish capacity building partnerships and networks for increasing the representation of developing countries in the use and development of impact assessment tools and methods to assess the impacts of implementation of response measures.

31. The compilation of concrete examples includes examples of strategies that involve international cooperation in countries' efforts to undertake just transition and economic diversification. The areas of cooperation include financial and technical, including technology transfer.

III. Good practices and challenges in understanding and addressing the impacts of the implementation of response measures

A. Good practices

32. Experts shared a range of good practices while implementing various workplan activities at KCI meetings, in technical papers, in the compilation of concrete examples and at technical expert meetings. Drawing from these discussions, the KCI agreed on a set of recommendations for consideration by the forum and/or highlighted key findings contained in its meeting reports and annual reports.²²

33. Drawing from the work of the KCI and the exchange of information and good practices, Parties adopted the following recommendations:²³

(a) Encourage Parties to engage relevant stakeholders at each step of the process of designing and implementing climate mitigation policies and policies to achieve sustainable development including through social dialogue, when possible and subject to national circumstances. The relevant stakeholders, among others, include workers, employers, organizations, academia, public and private sectors, women, and civil society;

(b) Encourage Parties to explore complementary policies, such as economic policies, social protection, and labour policies, to help strengthen the outcomes of the implementation of mitigation strategies, plans, policies and programmes including nationally determined contributions and low-emission development strategies;

²¹ See KCI document KCI/2021/5/10, annex II and annex III.

²² Available at <https://unfccc.int/process-and-meetings/bodies/constituted-bodies/KCI/documents#eq-1>.

²³ See decisions 19/CP.26, 7/CMP.16 and 23/CMA.3.

(c) Encourage Parties to strengthen international and regional cooperation as it contributes towards planning and implementation of mitigation policies with environmental and socio-economic benefits. For example, to help facilitate technology development and transfer in accordance with article 10 of the Paris Agreement, and strive towards harmonized regional approaches;

(d) Encourage Parties to use existing qualitative and quantitative assessment methodologies and tools to understand social, economic and employment effects of proposed mitigation measures as a way to inform and guide climate policies and to maximize the positive and minimize the negative effects of the implementation of response measures. More analysis of impacts, including, inter alia, sectoral, national, sub-national, domestic, and cross border, would be useful for informing climate policies and understanding how to maximize the positive and minimize the negative effects of the implementation of response measures;

(e) Encourage the forum and its KCI to enhance the capacity of Parties, particularly developing country Parties, through training and capacity building efforts, including the existing initiatives. This will enable Parties to carry out their own assessments and analyses of the impacts of response measures.

34. The database can serve as a starting point for stakeholders to select the most appropriate tools or methods for their assessment.

35. Quantitative and qualitative methodological approaches complement each other when performing assessment and analysis of impacts of implementation of response measures, as well as when assessing co-benefits of policies.

36. Qualitative methods that collect data using, for example, observation, interviews, and reviewing text can provide context-specific insights, increase transparency in the policy development process and validate empirically quantitative findings, thereby improving the quality and relevance of impact assessments.

37. The draft technical paper on impacts on vulnerable groups concludes that economic and labour force data on these groups are not always readily available. Therefore, impact assessments need to include qualitative analysis and primary research based on direct input and engagement from vulnerable groups on their experience and knowledge.

38. On the basis of compiling concrete examples of country-driven strategies and best practices on just transition of the workforce and creation of decent work and quality jobs and on economic diversification and transformation, the KCI has proposed a set of recommendations to be included in its annual report for consideration by the forum,²⁴ which include the following:

(a) Encourage Parties to invest in early planning of just transition policies which are inclusive and based on stakeholder engagement;

(b) Encourage countries at very low levels of economic development to prioritize getting the fundamentals right prior to undertaking economic diversification. As countries develop, multiple diversification paths become available.

B. Challenges

39. Discussions during KCI meetings and in two technical papers published by the KCI, the draft compilation of concrete examples, the draft technical paper on impacts on vulnerable groups, technical expert meetings and workshops related to response measures have identified challenges in assessing and addressing the impacts of the implementation of response measures and achieving economic diversification and transformation and just transition.

40. Data availability is one of the key challenges in conducting impact assessments when using certain quantitative tools and methodologies that require an abundance of data. When using those tools and methods, the absence of comprehensive national account data

²⁴ See KCI document KCI/2022/6/10, annex II, para. 3.

substantially limits the quality of analyses and the countries that can be analysed. The lack of available economic and labour force data on vulnerable people is also highlighted in the draft technical paper on impacts on vulnerable groups.

41. In many instances, in particular in developing countries, national capacities to collect data, make assumptions and develop or apply modelling tools as well as formulate case studies relevant to national circumstances are limited.

42. There is an emerging body of literature, tools and methodologies for evaluating the positive and negative impacts of the implementation of response measures that spans across numerous disciplines and geographies. However, there are areas in which gaps in the assessment and analysis and understanding of the impacts of the implementation of response measures exist, in particular country-, region- and sector-specific assessments.

43. The draft technical paper on impacts on vulnerable groups highlighted the relatively limited research on assessing and quantifying the social and economic impacts of response measures on vulnerable peoples. Women and poor populations are the groups of vulnerable peoples for which data are most frequently examined in assessments of response measures, whereas data on disabled people are almost completely lacking from the assessments of impacts of response measures.

44. There is a recognition of existing analytical and assessment tools and the fact that they have strengths and weaknesses, but also a recognition of the need for additional methodologies and tools to be developed and deployed to assess and analyse the impacts of the implementation of response measures.

45. Several guidance documents are available on undertaking impact assessments. However, none of them provide specific guidance on assessing social and economic impacts with a view to undertaking economic diversification and/or just transition.

46. The complexity of undertaking assessments increases with the number of sectors impacted by response measures and the availability of data.

47. One of the challenges in transitioning to decarbonization is to rebalance the broad portfolio of national assets. Some assets will be stranded in carbon intensive sectors, while others might be migrated to new sectors and new ones will be created.

48. Despite their continued economic growth, poverty remains widespread in developing countries. Factors such as high population density and a lack of available land create barriers to economic diversification.

49. Creating a market remains a challenge for products from local community-based economic activities that are part of economic diversification efforts.

50. One of the challenges in enabling just transition relates to the provision of domestic funding and mechanisms to support just transition.

51. Patriarchal norms, gender stereotypes and male-dominated industry, as well as a lack of organizational support, hinder the empowerment of women in just transition in rural areas.

52. Stakeholder engagement remains one of the major challenges in achieving just transition, particularly in developing countries, owing to different priorities and lack of linkages and coordination among relevant actors.

53. In their effort to decarbonize the energy sector, developing countries face an energy trilemma relating to affordability, security and environmental sustainability.

54. There is a lack of expertise and competencies that are crucial for building institutional capacity and arrangements in the transition to low-carbon energy systems, specifically in developing countries.

IV. Opportunities to further enhance understanding and addressing the impacts of implementation of response measures

55. Opportunities to further enhance understanding and addressing the impacts of the implementation of response measures, as well as enhancing economic diversification and transformation, and just transition of the workforce and the creation of decent work and quality jobs, were identified and emerged in the discussions during KCI meetings and in the compilation of concrete examples, draft technical papers on impacts on vulnerable groups, two technical papers published by the KCI, technical expert meetings and workshops related to response measures.
56. The presence of a strong regulatory framework for decarbonization and private sector competition can lead to technology development and investment in green technology and therefore expand economic diversification.
57. Initiatives that promote cooperatives can have an important role in supporting government to achieve climate change objectives while also providing opportunities for local economic growth. Similarly, multi-sector programmes have potential to enable diverse projects that address several environmental or socio-economic challenges and impacts.
58. Investing in new sectors that can provide productive capacity, which can also allow for export diversification, is one diversification strategy.
59. Special economic zones have the potential to jointly and cost effectively address the constraints in initiating new production lines in the effort towards economic diversification.
60. Active labour-market policies are essential to facilitate the shift to green jobs.
61. Programmes or projects aimed at shifting away from fossil fuels or install renewable energy generation units provide opportunities for training of and/or reskilling for new technologies.
62. Stakeholder engagement is a consensus-building process that will allow governments to establish higher levels of ambition for implementation of mitigation actions.
63. The effectiveness and acceptability of mitigation policies increase by incorporating diverse knowledge and input from stakeholders from different groups of vulnerable peoples.
64. The rapid rise of youth climate movements globally has succeeded in highlighting global climate inaction as a problem framed by the perspectives of justice and intergenerational equity.
65. Investing in data collection can assist countries in the effort to assess the impacts of the implementation of response measures.
66. Capacity-building partnerships and networks may increase the representation of developing countries in the use and development of impact assessment tools and methodologies.
67. Energy transition policies that reduce domestic burden and fuel-gathering activities enable women to participate in revenue-generating activities, which results in an increase in women's empowerment and political participation.
68. Mitigation policies that increase electrification and automation can improve energy and transport accessibility and health conditions, and therefore reduce risks related to climate change and response measures for people with disabilities.
69. The technical paper on capacity-building identified collaboration opportunities, including specific examples, with potential partners in different areas pertaining to tools and methodologies for assessment, economic diversification and transformation, and just transition.