



INTEGRATING ADAPTATION INTO SOCIAL AND ECONOMIC DEVELOPMENT

INSIGHTS FROM SOME “EARLY MOVERS”

Executive Summary

Climate change is no longer an obscure concern. Increasingly, the impacts of climate change are being felt around the world. In terms of international policy, the need to integrate adaptation with development is well recognized. In developed and developing countries alike, national governments are building adaptation into their economic and sectoral plans and policies. While progress has been slow, it nevertheless is accelerating.

Much of this progress, however, remains at the commitment and planning stages. There is limited evidence that a change in such has led to a significant difference in the way development is practiced or in the way economic systems function. A recent review of over 100 mainstreaming efforts in developed and developing countries has discovered that while the vast majority had integrated adaptation into their sectoral policy documents and plans, only half reported concrete projects and activities.

This paper examines the reasons for this “action gap.” Multiple factors contribute to the slow pace of progress. Lack of finance is a key barrier. Technical barriers and knowledge limitations also stand in the way. Political and institutional factors also constrain adaptation action, particularly the lack of political will or commitment. It is now common for political leaders to speak out about climate change and express an enthusiasm to address it; however, there is often a gap between policy statement and climate action.

This paper also draws insights from some “early movers” on how to accelerate progress and overcome this action gap. While they are not the only countries attempting to change the way in which their social, economic, and investment decision-making is made in response to climate change, Afghanistan, Colombia, Germany, India, and Rwanda demonstrate the wide variety of ways in which adaptation can be integrated into social and economic development, as well as the importance of key enabling factors.

In Rwanda, the Ministry of Agriculture built climate resilience into existing agricultural development and extension services for tea and coffee, the country’s top agricultural exports. In Germany’s state of Hesse, concern about the

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public health impacts of increasing heat waves on older residents led to joint public and private action, informed by climate projections. In India, multiple state governments have worked to make agricultural value chains more resilient to climate change by collaborating with development partners and farmer producer companies. In Afghanistan, the government is integrating climate change adaptation into domestic budget planning. In Colombia, addressing climate change is one of four key objectives of the National Development Plan, with legally binding goals.

The case studies highlight critical factors for accelerating action: political will and sustained leadership; policy commitments, mandates, or legislation; coordination across

agencies and sectors; information and knowledge; and finance and supportive budgetary processes. The five “early movers” illustrated in this paper have shown what can be done. The task now is to put serious resources and political commitment behind adaptation plans and move swiftly from intention to concrete action. There is no time to spare.

1. Introduction

Climate change is no longer an obscure concern; increasingly, its impacts are being felt around the world. Extreme weather systems and storms are causing major disasters, setting regions back by years or decades. Slower moving changes (e.g., sea-level rise, shifts in seasonal rain patterns,

About this paper

This discussion paper focuses on how, while many countries have made commitments or plans to integrate adaptation into their social and economic plans and policies, an “action gap” exists. A change in commitments and plans has not yet led to a significant difference in the way development is practiced in response to climate change impacts. The paper examines the reasons for this action gap. Based on insights from five “early movers”—Rwanda, Germany, Colombia, India, and Afghanistan—it identifies factors that can help overcome barriers to action. The goal is to shine a bright, gleaming light on positive examples, so they can guide other countries striving to do the same.

This paper draws heavily from the World Resources Institute paper “From Planning to Action,” forthcoming in October 2018, with additional material provided by the co-authors.

About discussion papers

The Discussion Papers explore some of the key challenges that the Global Commission on Adaptation will address. They contain preliminary research and analysis, and outline potential solutions. They are intended to stimulate timely discussion and to inform ongoing debate on emerging issues. They therefore lay some of the groundwork for the GCA flagship report and its evidence-based narrative about how humanity can continue to progress, despite the impacts of climate change.

These papers reflect the views of the authors and not of the Global Commission on Adaptation or of the Managing Partners to the Commission.

Discussion Papers contain preliminary research, analysis, findings, and recommendations. They are circulated to stimulate timely discussion and critical feedback, and to influence ongoing debate on emerging issues.

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and increasing heat) continue to erode economies and threaten people's livelihoods and their basic needs, such as potable water. Businesses, communities, and governments are increasingly recognizing that without effective adaptation measures, they risk much greater damage.

In this context, it is now widely recognized that the integration of adaptation—from the assessment of climate risks to the implementation of practical solutions—is essential to all aspects of social and economic development. This approach, often referred to as “mainstreaming,” can help minimize trade-offs and create synergies between climate action and development, and make the most of available resources. For instance, an estimated US\$90 trillion investment in new infrastructure is expected over the next decade or so in water, energy, transport, and telecommunications, among others.¹ It is in the interests of the private and public sectors to take climate risks into account in the design of and decision-making regarding these new investments.

Mainstreaming adaptation is by no means a silver bullet; it can also have its pitfalls. Were adaptation to be considered the responsibility of every person, for example, there would be a lack of task ownership. Similarly, when adaptation measures are formulated into broader policies and plans, their focus and the political will may diminish in the tangle of bureaucratic processes. In the absence of good coordination across sectors, scales, and stakeholder groups, mainstreaming activities may fail to address the critical challenges or they may lead to unintended consequences. Nevertheless, these potential limitations outweigh the benefits of understanding how climate change places social and economic objectives at risk and of ensuring that new programs and investments will reduce vulnerability to climate change rather than increase it.

The challenge today is to transform commitment into action. Although many countries and institutions now integrate climate risk management into their development, economic, and sectoral plans and policies, the decisions they make have not necessarily changed. This paper examines the reasons for this “action gap” and, based on the insight of a few “early movers” (Afghanistan, Colombia, Germany, India, and Rwanda, not necessarily in that order), it aims to identify the factors that will enable the shift from commitment to action. The objective is to significantly illuminate some positive examples.



Climate change is no longer an obscure concern; increasingly, its impacts are being felt around the world.

2. From Planning to Implementation: A Critical Gap

In terms of international policy, the need to integrate adaptation into development is well recognized. This is reflected in the United Nations Sustainable Development Goals, for example, as well as in the Paris Agreement on climate change, the Sendai Framework for Disaster Risk Reduction, and the outcome of the World Humanitarian Summit 2016.

In developed and developing countries alike, national governments are building adaptation into their economic and sectoral plans and policies. For example, under the United Nations Framework Convention on Climate Change (UNFCCC), developing countries are encouraged to develop National Adaptation Plans that integrate adaptation with development. As of April 2018, 47 countries had submitted proposals for National Adaptation Plans or similar plans to the Green Climate Fund.² In addition, more than 100 developing countries included adaptation measures in their commitments under the Paris Agreement—among them, 30 developing countries that aim to incorporate adaptation into national development plans or sectoral policies.³ An analysis of adaptation actions, reported to the UNFCCC by 41 developed countries, found that the majority of efforts involved mainstreaming adaptation into existing policies rather than forming stand-alone initiatives.⁴ Furthermore, countries as diverse as Pakistan and Canada have prepared, or are in the process of preparing, provincial-level plans that present a roadmap for mainstreaming climate change into subnational plans and policies.

Multilateral banks and bilateral agencies also have made commitments to mainstream adaptation into their development portfolios. Major bilateral donors, such as the U.S. Agency for International Development (USAID) and the UK Department for International Development (DFID) have made mainstreaming a central part of their climate and development strategies.⁵ The World Bank now requires climate risk screening across its investment portfolios.⁶ The Organisation for Economic Co-operation and Development (OECD), over a decade ago, published policy guidelines for integrating adaptation into development cooperation.⁷ Furthermore, the Global Environment Facility and dedicated funds, such the Green Climate Fund, Adaptation Fund, and Climate Investment Funds, provide financial support for national governments to integrate adaptation into development planning.

While progress has been slow, it nevertheless is accelerating. In 2011, an analysis of 125 developing countries established that efforts to integrate adaptation considerations into development objectives are starting to get under way, with evidence of further progress in Central America and Mexico, the Pacific region, South America, and southern Africa.⁸ Less than five years later, there is an obviously significant uptick. In a follow-up review of 15 countries in Africa and Asia, 14 were found to have recognized adaptation in their national development vision and plans, an increase from only four in 2011. Likewise, while in 2011 only three had established national coordinating entities, by 2015 the number was 14.⁹

Much of this progress, however, remains at the commitment and planning stages. There is limited evidence that a change in commitments and planning has led to a significant difference in the way development is practiced or in the way economic systems function. A recent review of over 100 mainstreaming efforts in developed and developing countries has discovered that while the vast majority had integrated adaptation into their sectoral policy documents and plans, only half reported concrete projects and activities.¹⁰ Furthermore, the 125-country analysis cited above found that most focused on research, capacity-building, policy formation, and integration; relatively few centered on implementation of adaptation actions.¹¹ The 2015 follow-up in select countries noted that while more implementation was taking place, it was difficult to ascertain whether this increase was proportionate to the advances that had been made at the policy level. Stepped-up efforts are required around the world.

3. What Stands in the Way?

Multiple factors contribute to the slow pace of progress, although the lack of finance is a key barrier. Adaptation carries costs, whether it involves new activities or changes to a planned investment or program to increase resilience to climate change. By one widely cited estimate, the annual cost for adaptation in developing countries alone could range from US\$140 billion to US\$300 billion by 2030, yet public international finance flows for adaptation were only US\$22 billion in 2017.¹² Moreover, policy makers typically need to justify the cost of adaptation measures by demonstrating the expected benefits; however, uncertainties about future climate change and a paucity of reliable tools for cost-benefit analyses make this difficult. Because of those barriers, many governments in practice find it easier to invest in repairing or rebuilding infrastructure following climate change-related damage than in proactive efforts.

Technical barriers and knowledge limitations also stand in the way. The most basic issue is that climate models—including those relatively “downscaled” ones—are seldom designed to meet the needs of adaptation planners; for example, data for a country with a diverse landscape and multiple climate zones may be provided only for the country in its entirety rather than for specific zones.¹³ The data may also be incomplete or inconsistent. There is substantial uncertainty in climate projections—one model may show an increase in rainfall, for example, while another may demonstrate a decrease. Moreover, there are substantial challenges in establishing how a specific set of climatic changes will translate into socio-economic impacts, and in identifying viable adaptation options for different sectors.¹⁴ Plans may need to be made sufficiently robust to address a range of possible future conditions, with the requirement of extensive consultations and expert assistance, as well as an iterative learning approach.

The political economy of adaptation also is critical. Different groups have varying interests, incentives, power, and influence. Actions taken by one group to avoid climate impacts have the potential of worsening the effects on another group; for example, building walls for protection from extreme river flooding can protect one set of homes upstream, yet further inundate another set of homes downstream. In addition, social, political, religious, and cultural differences may affect how readily people and

communities adapt. They may shape how risk is perceived, which adaptation actions are appropriate and/or prioritized, and who has access to the social, financial, technical, and other resources needed to adapt. For example, in some contexts, social norms and practices limit women's access to information, resources, and opportunities that facilitate adaptation action.

Political and institutional factors also constrain adaptation action, particularly the lack of political will or commitment. It is now common for political leaders to speak out about climate change and express an enthusiasm to address it; however, there is often a gap between policy statement and climate action.¹⁵ As governments shift from developing climate policies to implementing them and mainstreaming climate action into development processes, the political will often plummets, especially if climate action conflicts with other, more immediate priorities. The absence of coordinated governance also impedes progress, as different or competing priorities, mandates, jurisdictions, and constituencies may complicate the manner in which institutions should work together to achieve adaptation objectives. To the extent that these institutions control the resources to enable adaptation, such challenges can hinder adaptation action on the ground.¹⁶

4. How Five Illustrative “Early Movers” Are Leading the Way

Despite these deterrents, more and more governments are stepping up to the challenge. In this section, the case studies of Afghanistan, Colombia, Germany, India, and Rwanda are examined. These illustrative examples were selected due to their having been well documented and being representative of geographic diversity; they are not, however, the only countries attempting to change the way in which their social, economic, and investment decision-making is made in response to climate change. Together, these countries demonstrate the wide variety of ways in which adaptation can be integrated into social and economic development, as well as the importance of key enabling factors.

4.1 Supporting Resilient Tea and Coffee Production in Rwanda

While tea and coffee are Rwanda's top agricultural exports and key components of its rural development strategy, both crops are vulnerable to climate change.¹⁷

In particular, both commodities are sensitive to rising temperatures, heavy precipitation, and associated floods and landslides. Future climate change is expected to exacerbate these impacts by increasing climate variability and extreme events and by shifting agro-climatic zones.¹⁸

The Ministry of Agriculture has carried out a climate and risk assessment of its second Agriculture Sector Investment Plan and has prioritized concrete actions to manage climate risks in the tea and coffee sectors. Using the latest global climate model predictions, the Ministry of Agriculture has identified and implemented several adaptation interventions. First, climate resilience is built into existing agricultural development and extension services for coffee and tea farmers (e.g., helping them to plant shade trees, to intercrop, and to diversify their cash crop base). Second, the ministry has disseminated climate change information to assist tea farmers to select suitable sites for future tea production. Third, it has begun to prepare the tea sector for future risks, for example, by investing in the early monitoring of pests and in the development of new and more resilient tea varieties.¹⁹

Political support and funding have been critical components to implement these actions, representing some of the first successes in mainstreaming adaptation in Rwanda. The President of Rwanda, as well as key agencies such as the Ministry of Finance and Economic Planning, have championed the cause. With this supportive political environment, Rwanda has established a national green fund, FONERWA, to support the implementation of cross-sectorally integrated plans and for strategic environment and climate assessments. It also has integrated climate considerations into Rwanda's Economic Development and Poverty Reduction Strategy (2013–2018). In addition, climate-related objectives are now included in national and sector development plans, supported by sector mainstreaming guidance and indicators, as well as a checklist of climate indicators in the budget circular. The Rwanda Agriculture Board, for its part, has set up a Climate Services for Agriculture project to support farmers and decision-makers.



Extreme heat is becoming more common and more severe around the world, posing serious threats to public health

The Government of Rwanda has applied lessons from the actions taken in the tea and coffee sectors to mainstream adaptation into specific programs in Rwanda's next agriculture plan. Climate considerations have been integrated into the plan's results framework.²⁰ Rwanda also has been active in mobilizing funds, including from sources such as the Green Climate Fund, to build a strong pipeline of finance to scale up its climate-resilient development activities in the future.

4.2 Managing Extreme Heat in Germany

Extreme heat is becoming more common and more severe around the world, posing serious threats to public health, including in developed countries. Based on a high-emissions scenario, Germany's heat waves are projected to increase from approximately 10 days in 1990 to around 135 days in 2100.²¹ In the German state of Hesse, officials are particularly concerned about the impact of extreme heat on the elderly, who are particularly vulnerable to heat stress.

Informed by climate projections, the health sector has implemented multiple actions to protect older residents.

Early warning systems alert citizens and organizations before heat waves hit the area, providing heat warnings and recommendations on handling heat stress and reducing other associated health risks. Furthermore, a quality seal, "Climate Adapted", was formalized to ensure the standards of "climate-fit" nursing care.²²

These actions are a result of dedicated research and a coordination mechanism that has brought the public and private sectors together to convert insights into action. As part of Germany's Adaptation Action Plan,²³ the Federal Ministry of Education and Research has invested in a research funding program, KLIMZUG, which seeks to strengthen understanding of the specific climatic needs of seven select regions.²⁴ The program has identified intersectoral, innovative adaptation strategies and actions. In North Hesse, KLIMZUG has brought together various actors from the health sector, including the health department, medical professionals, owners of nursing homes and pharmacies, as well as citizens, to identify and implement these adaptation actions.²⁵ Together, they analyzed climate and demographic data to identify high-risk areas, came up with adaptation options, and established a Network for Heat Prevention to implement the selected measures. The programs developed by the Network were well received by the public and are now an active service of the Kessel region's Health Department.

4.3 Working with Farmer Producer Companies in India to Adopt Climate-Resilient Crops

As in Rwanda, climate change impacts on agriculture in India are of particular concern. It is estimated that climate change is responsible for annual economic losses in the agriculture sector of up to 9 percent and the associated loss in farmers' income of 15–18 percent.²⁶

With support from development partners and technical consultants, multiple state governments have worked to develop climate-resilient agriculture value chains. An analysis in the state of Maharashtra found that the agriculture production mix needed to be changed to include more climate-resilient crops.²⁷ After further investigation and discussions with farmers, it was determined that Bengal Gram, pigeon pea, sorghum, pearl millet, and soybean were the most climate-resilient crops for the region, as they require low water and energy levels, have the potential to deliver better economic returns, and can withstand a higher variation in temperature, rainfall, and extreme events.²⁸

The Government of India and the World Bank are working together with farmer producer companies to assist farmers in the switch to more climate-resilient crops by

making key inputs more affordable and helping farmers to access information and bring their produce to market.

The state of Maharashtra is home to approximately 70 percent of India's farmer producer companies—representing more than 1,300—that are the lynchpin of its agricultural economy. These are similar to farmer collectives, as they allow farmers to band together to secure credit, start agricultural enterprises, strengthen market linkages, and enhance their bargaining power.²⁹ The government and its development partners are training farmer producer companies on how to secure finance for climate-resilient agriculture practices (including adoption of climate-resilient crops), while providing advice and inputs during the production process and helping the companies to bring the crops (or their derivative products) to market to strengthen farmers' livelihoods.

The agriculture sector in Maharashtra is adapting to climate change by ensuring that farmer producer companies prioritize the production of climate-resilient crops in their business plans and financing guidelines. This, in turn, will ensure that farmers will not only receive the support they need to grow these crops, but also that their livelihoods are better able to withstand the impact of a changing climate.

4.4 Integrating Adaptation into National Budget Processes in Afghanistan

Afghanistan is one of several countries in which national and subnational governments are pioneering approaches to integrating climate change into domestic budgets.

Under the direction of the Ministry of Finance, several Afghan ministries are analyzing the degree to which the programs that they intend to finance with the next national budget will deliver adaptation co-benefits.³⁰

The Government of Afghanistan is considering the adaptation benefits of planned expenditure, along with the economic and social benefits that are usually considered during budget allocation. This enables officials to prioritize investment in those actions that deliver high adaptation co-benefits, and to identify programs that deliver inadequate benefits or increase climate risk so they can be modified to expand their contribution to adaptation. For instance, the Ministry of Agriculture, Irrigation and Livestock found that a plan to establish a green belt around the city of Kabul, which

is suffering from groundwater depletion, will deliver high adaptation benefits. The green belt, now a priority for funding, will contribute to the recharge of aquifers and support the city in adapting to climate change.

The Ministry of Finance is using its institutional mandate and innovative technical tools to ensure that key ministries mainstream adaptation into their activities. This has the potential to create sustainable financing for climate-resilient development at scale and to ensure that public investments do not inadvertently make Afghans more vulnerable to climate change.

4.5 Making Adaptation a Development Priority in Colombia

After devastating floods and landslides in 2010 and 2011, the Government of Colombia has opted to refrain from treating climate action as a purely environmental issue and, instead, make it a development priority. The floods severely affected key sectors such as agriculture and infrastructure, with total damages of approximately US\$7.8 billion.³¹ Addressing climate change became one of four key development objectives in Colombia's National Development Plan 2014–2018. The objectives laid out in the plan are legally binding, providing a degree of accountability in ensuring that climate objectives are achieved. Efforts to mainstream climate action systematically into national policies and procedures are now led by the National Planning Department rather than the Ministry of Environment and Sustainable Development. In 2016, the government also established the National Climate Change Policy, focusing on five strategic dimensions: rural, urban, and infrastructure development; energy; and the environment. In the coming years, ministries are expected to issue sectoral and territorial plans that incorporate adaptation objectives into specific programs.

Similar to Rwanda, Colombia has had political support for adaptation action at the highest levels—and supportive budgetary processes. Juan Manuel Santos, President of Colombia from 2010 to 2018, actively promoted the climate agenda and prioritized adaptation, and the country intends to go forward with implementation. With the highest levels of political support for climate action, Colombia has established a national climate finance strategy to mainstream climate action into public investment projects, garner access to private and international finance, and

develop suitable financial instruments. In addition, noting the damages suffered in 2010–11 and the compelling need for rapid investment mechanisms, the government also has created the National Adaptation Fund. Officials are tracking climate finance flows at the sector, state, and other levels as well, in order to help improve decision-making and accountability.³²

It is yet to be seen how Colombia manages to translate into action its plans and institutional structure for mainstreaming adaptation. Nevertheless, it is worth highlighting Colombia in this paper for all it has done to develop a robust institutional structure for mainstreaming climate change adaptation, aided by strong leadership with a focus on policy frameworks that establish coordination mechanisms, financial processes, and monitoring and tracking tools.

5. Insights from “Early Movers”: Five Factors That Drive Action

Afghanistan, Colombia, Germany, India, and Rwanda are following different approaches to integrate adaptation into social and economic development; nevertheless, they share some commonalities. Although more time is needed to determine their level of success, the case studies highlight several critical factors to accelerate action:

1. **Political will and sustained leadership:** “Champions” who are committed to carrying forward a long-term vision can be a key ingredient in the drive toward implementation. Such leadership will come from influential individuals or ministries that take the lead in mainstreaming initiatives, or from nonstate actors, such as academia, civil society, or the private sector who contribute critical knowledge and marshal political attention. The most notable example of this is Colombia, where President Santos, himself, led the way.
2. **Policy commitments, mandates, laws, or legislation:** Policy frameworks that include mechanisms for accountability and/or enforcement are more likely to accelerate implementation. One approach is to incorporate reporting requirements; another is to codify commitments through formal interministerial documents such as gazettes or circulars. Ownership and accountability of these frameworks can be enhanced by actively soliciting and incorporating public input through continued stakeholder engagement. Afghanistan, Colombia, and Rwanda have formalized their commitments in ways that help ensure that adaptation action will continue to move forward.
3. **Coordination across agencies and sectors:** Effective mainstreaming of adaptation into social and economic development requires engaging all relevant government agencies and sectors. One way to do this effectively is to designate a central body with strong convening and/or decision-making powers (e.g., ministries of finance or planning, or the office of the president or prime minister) to drive implementation. It is also crucial to ensure wide stakeholder participation in the decision-making process, including civil society, to ensure buy-in from those affected and confirm that “winners” and “losers” alike are well represented.³³ The work in Hesse, for example, has brought together the key groups, leading to practical solutions that were widely embraced.
4. **Information and knowledge:** Applying specific tools and guidance for mainstreaming climate change through learning initiatives, training, or solely improved access to knowledge and expertise can greatly facilitate adaptation action. So-called “knowledge brokers”—trusted intermediaries who gather and synthesize information and tailor it to users’ specific needs—can play a crucial role in ensuring that those who plan and implement adaptation strategies have the data and knowledge they need, in a form that is accessible and useful to them.³⁴ Sustained technical assistance, capacity-building, and staff secondment can be essential in bridging the implementation gap, since capacity on the ground is often limited.³⁵
5. **Finance and supportive budgetary processes:** Large-scale adaptation action will require the mobilization of international public finance, investment from the private sector, as well as domestic resources. It will also require national or subnational budget processes that encourage agencies to consider climate risks, invest in measures to address them, track those expenditures, and assess their effectiveness. Afghanistan, Colombia, and Rwanda offer examples of these approaches. Countries also may wish to implement budget expendi-

ture tracking initiatives, “tagging” or earmarking efforts, and/or special funds to support mainstreaming efforts; adopt resilient procurement policies; and encourage financial institutions to consider and report on climate risks.³⁶ Governments can provide specific guidance through finance ministries on incorporating climate change in budget planning and allocation. They also can use national government performance monitoring and budgeting systems to ensure that sector officials are incentivized to request and implement budgetary support for mainstreaming efforts.

6. A Call to Action

Integrating adaptation into social and economic development—not only in terms of policy, but also in action—is no small challenge. It involves multiple actors, institutions, processes, and resources. It requires accessing, processing, and analyzing technical and complex information, as well as working across all systems that enable governments to deliver services and innovate—from planning and budgeting to human resources, monitoring, and accountability systems. Furthermore, it takes place over long time frames, requiring ongoing effort and political will. Yet, given the risks faced, there is urgent need to scale up adaptation action—especially if the Paris Agreement’s goal is met of keeping the global temperature increase under 2°C.

Climate change impacts threaten to unravel decades of development around the world. International accords and national policies and plans recognize the immediate need for adaptation. Businesses increasingly recognize it as well. “Early movers” have shown what can be done. The task now is to put serious resources and political commitment behind adaptation plans, and move swiftly from intention to concrete action. There is no time to spare.

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