GLOBAL PROGRAMME CLIMATE CHANGE INDIA

STRATEGY 2014-17

FOREWORD

The protection of the natural environment and combatting climate change are important pillars of Switzerland's national and foreign policies. Switzerland has continuously developed and strengthened its national climate legislation. It has also taken an active role in developing the multilateral climate regime, advancing climate research and providing climate financing.

Recognizing that climate change also constitutes an important global challenge for development, the Government of Switzerland decided in 2008 to create a dedicated programme for integrating climate change into its development cooperation, called the Global Programme Climate Change (GPCC). India was chosen as a priority country under the GPCC, capitalizing on the long-standing engagement of the Swiss Agency for Development (SDC) in the fields of natural resources management and energy in India.

This strategy provides a framework for the implementation and further development of the project portfolio. It was designed based on SDC's past experiences and in consultation with a variety of stakeholders. The strategy is aligned with India's climate change policies and programmes and supports their implementation. It addresses both adaptation and mitigation and strives to link policy, action and research. Since climate change is a relatively new topic, the generation, exchange and dissemination of knowledge and experiences among different actors in India and beyond constitutes an important element of the strategy. In order to do so, we support the establishment of partnerships between Indian and Swiss institutions and facilitate the sharing of experiences with other developing and emerging countries. It is our intention that good practices from the field inform policy making at different levels, including the multilateral processes.

2015 will be an important year for the environment and development with the adoption of the new development agenda and the new climate agreement for post-2020. We are convinced that our programme is well positioned to make a meaningful contribution to the achievement of these agendas.

We are looking forward to further strengthening the cooperation with the Central and Regional Governments of India for a climate compatible development.

Janine Kuriger and Daniel Ziegerer
Directors of Cooperation

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BACKGROUND AND CONTEXT

- India's Development and Climate Change Challenges
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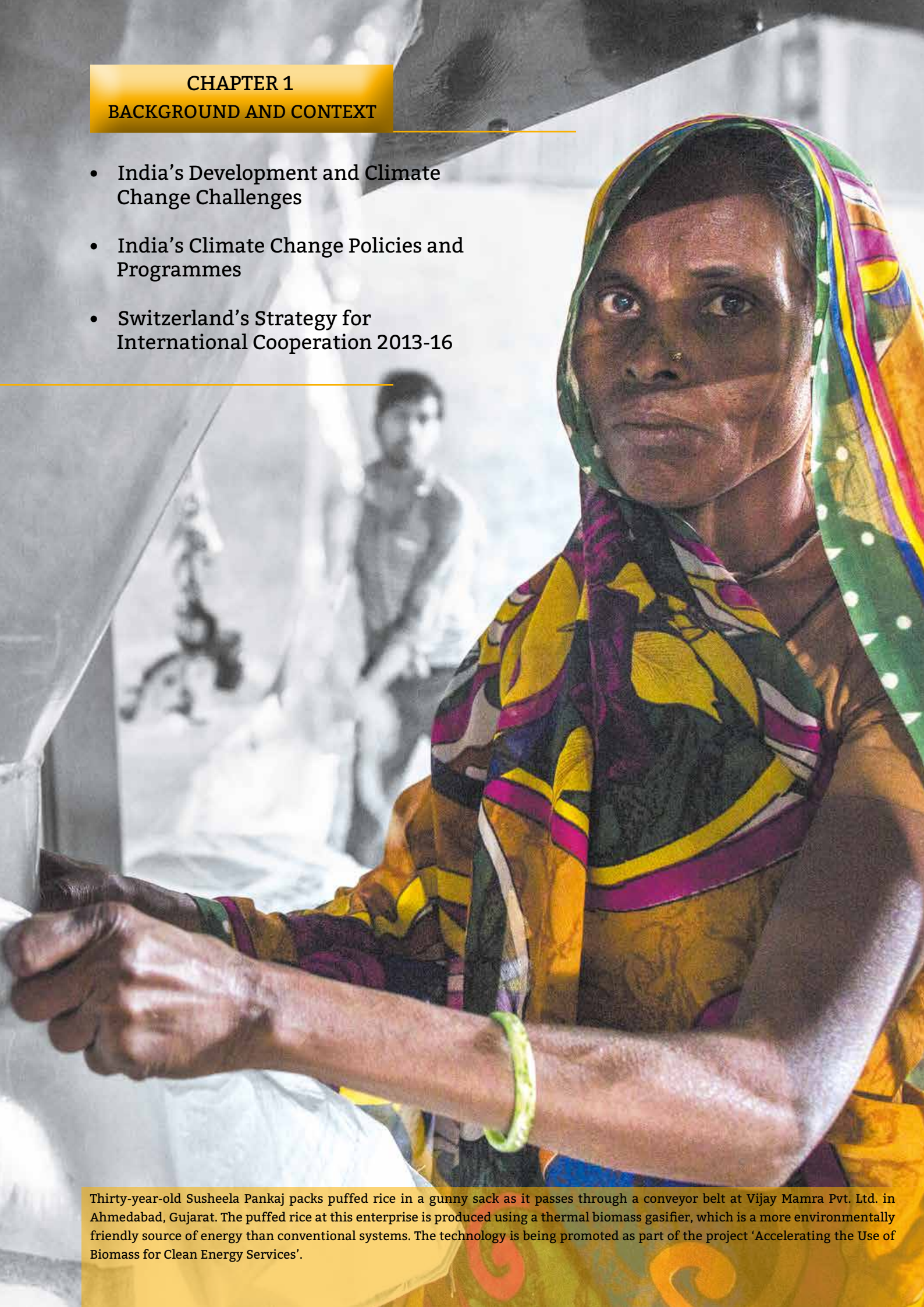


Thirty-year-old Susheela Pankaj packs puffed rice in a gunny sack as it passes through a conveyor belt at Vijay Mamra Pvt. Ltd. in Ahmedabad, Gujarat. The puffed rice at this enterprise is produced using a thermal biomass gasifier, which is a more environmentally friendly source of energy than conventional systems. The technology is being promoted as part of the project 'Accelerating the Use of Biomass for Clean Energy Services'.

BACKGROUND AND CONTEXT

INDIA'S DEVELOPMENT AND CLIMATE CHANGE CHALLENGES

India stands at an important moment in its history of over six-and-a-half decades of accelerated development. The development efforts have resulted in moving a sizeable population out of poverty. The development paradigm itself has witnessed a subtle shift from one of economic growth to that of inclusive development. Despite a steady growth rate, India still faces development deficits of huge magnitude. One-third of India's population (around 400 million) lives below poverty line. Nearly two-thirds of the population still depends on agriculture, which is increasingly coming under stress due to depletion of water resources, changes in land use and increased variability and uncertainty of weather patterns. In addition, about 400 million rural people don't have access to electricity and other modern forms of energy. India is also undergoing a rural-urban transformation. With urban centres growing exponentially, pressure is rising on critical necessities such as water, energy and infrastructure. Furthermore, persistent inequities and inequalities result in low human development.

Climate change further exacerbates India's development and sustainability challenges. Increasing temperatures and changing precipitation patterns are expected to pose significant risks to agriculture (including allied sectors), water resources and health. According to India's Second National Communication (NATCOM)[1], India's high vulnerability to climate change can be illustrated by five major expected impacts:

- threat to water security due to monsoon variability and retreating snowline/melting glaciers,
- threat of sea level rise and salt water ingression in the coastal regions,
- threat to long-term food security due to reduced yield of rice and wheat and other major crops,
- loss of forest types and biodiversity, and
- increase in malaria and other vector-borne diseases, along with diarrheal infections and rise in mortality.

At the very heart of the response to climate change lies the need to reduce greenhouse gas emissions. As India's economy grows, its greenhouse gas emissions are also rising substantially. For example, India's per capita GHG emissions increased from 0.67 tons in 1990 to 1.6 tons in 2011[2]. Projections[3] show that India's per capita GHG emissions will likely grow in the range of 2.77 tons to five tons by 2030[4], which is not excessive, given the need for social and economic development.

1 MoEF (2012). *India's Second National Communication to United Nations Framework Convention on Climate Change*. New Delhi: Ministry of Environment and Forests, Government of India.

2 Planning Commission (2014). *The Final Report of the Expert Group on Low Carbon Growth Strategies*. New Delhi: Planning Commission, Govt. of India.

3 PBL (2012). *Trends in Global CO2 Emissions (2012 Report)*. The Hague: PBL Netherlands Environmental Assessment Agency.

4 MoEF (2009). India's GHG Emissions Profile: Result of Five Climate Modelling Studies. New Delhi: Ministry of Environment and Forests, Government of India.

INDIA'S CLIMATE CHANGE POLICIES AND PROGRAMMES

The National Action Plan on Climate Change (NAPCC)[5], its eight national missions, the State Action Plans on Climate Change (SAPCC) and the national development plan[6], provide the roadmap for India's climate change policy. India's domestic energy and climate policy objectives are driven by a series of measures aimed towards low carbon growth and by programmes for building resilience of communities to climate variability and other impacts of a changing climate.

The national development plan 2012-17 (12th Five-Year Plan) identifies and elaborates measures that promote India's development objectives, while also yielding co-benefits for addressing climate change. India's action on climate change is articulated around three lines: 1) Adaptation to climate change vulnerability and variability, 2) Scientific and institutional initiatives to integrate climate science, and 3) Low-carbon inclusive growth.

At the national level, there is a growing focus on mainstreaming adaptation into policy and planning. Adaptation measures are considered to have a close association with poverty reduction and promotion of climate-resilient sustainable development. There are three specific national missions for addressing climate change adaptation outlined in the National Action Plan on Climate Change, namely, the National Water Mission, the National Mission for Sustainable Agriculture and the National Mission for Sustaining the Himalayan Ecosystem. Further, climate proofing of investments/ assets is being systematically integrated into national programmes focusing on natural resources management and rural development. At the state level, SAPCCs are being finalized to address specific issues towards integrating climate risks into holistic and sectoral policies, programmes and practices.

In order to strengthen scientific research and capacities on climate science, the Government of India has set up a National Institute for Climate Change Studies and Actions. The Institute works in close cooperation with a network of over 125 academic institutions and

"The benefits of SDC-TERI designed cupolas include reduction in pollution, reduced costs and lesser melting loss."

-Jagdip Bhai Mistry, owner of a foundry unit in Ahmedabad, India.

5 GoI (2008). *National Action Plan on Climate Change*. New Delhi: Government of India.

6 Planning Comission (2012). *Faster, More Inclusive and Sustainable Growth, Twelfth Five-Year Plan (2012-17)*. New Delhi: Planning Commission, Government of India

universities at the national and state levels to improve the scientific understanding of climate change and its impacts and provides inputs for appropriate policy planning. The Institute will also focus on strengthening capacities at sub-national/state level through capacity building on adaptation and mitigation.

As well as adaptation, India's National Action Plan on Climate Change (NAPCC) puts a strong emphasis on mitigation through its four national missions, namely, the National Solar Mission, the National Mission for Enhanced Energy Efficiency, the National Mission on Sustainable Habitat, and the National Mission for a Green India. The national development plan stresses on low carbon inclusive growth, in which renewable energy and energy efficiency are important ingredients for ensuring India's energy security. In 2012, renewable energy accounted for 12 percent (24,500 MW) of India's total installed power generation capacity and is expected to increase to 17 percent by 2017 and to 33 percent by 2030[7]. India aims to derive 25 percent (30,000 MW) of its additional installed capacity during the 12th Five-Year Plan from renewable energy resources by the year 2017. Policy measures and incentives are increasingly being put in place to move renewable energy from margins to mainstream. In a more recent policy announcement, India aims to install 100,000 MW of solar power by 2022, which is a fivefold increase from its initial plans under the National Solar Mission. Additionally, to achieve a rapid increase in energy efficiency, the Government of India has introduced a series of public policy initiatives and market-based instruments in critical sectors such as the buildings, industries, transport and end-use appliances. These initiatives are in line with India's international voluntary commitment to reduce its GHG emission intensity per unit of GDP by 20-25 percent by 2020. With rapid urbanization taking place in India, the Government also plans to develop 100 Smart Cities in which emphasis will be given to sustainable habitat issues with a focus on integration of low carbon (as well as climate resilience) measures in city planning and investments.

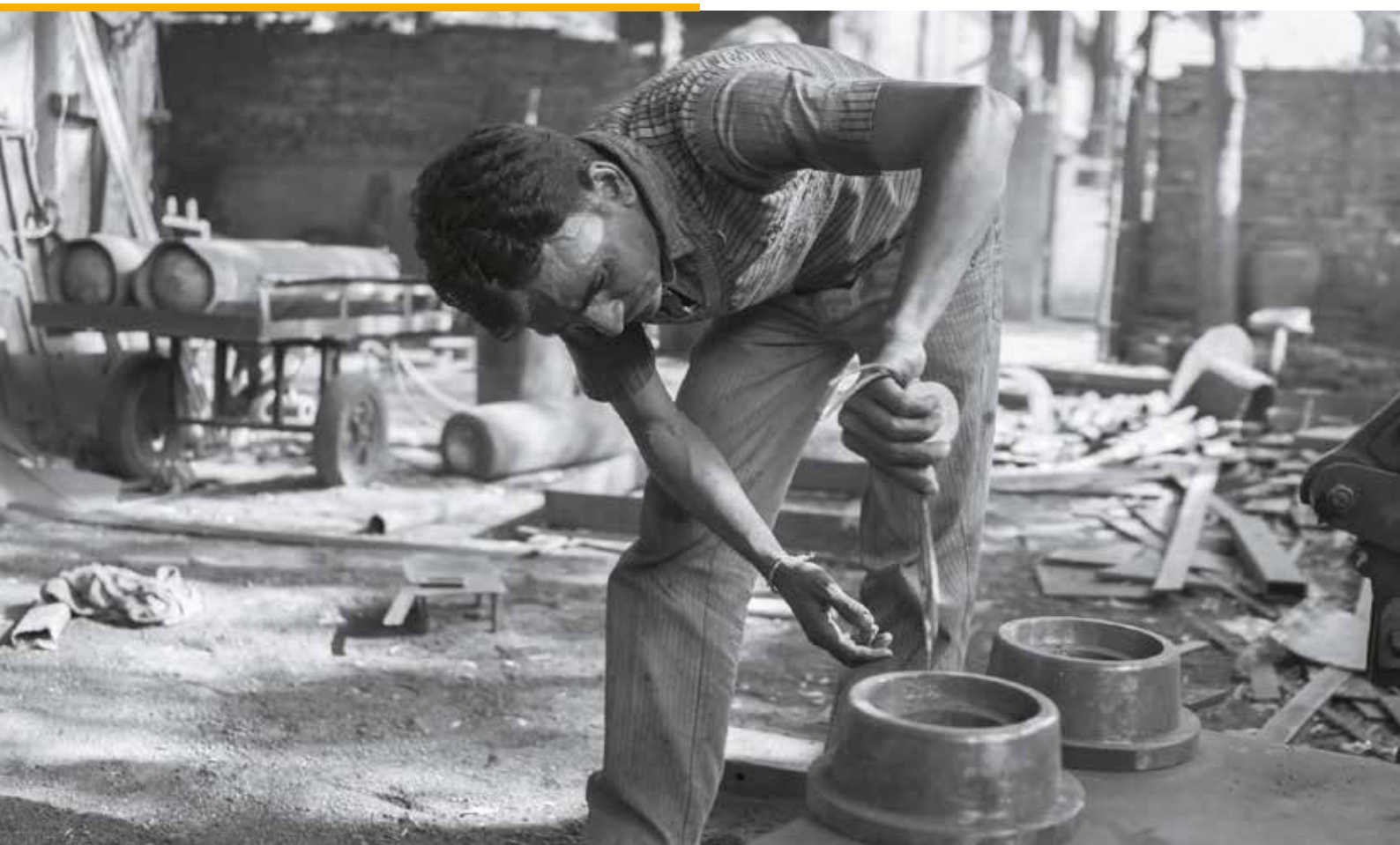
In the international climate negotiations for a post-2020 global framework, India continues to be guided by the principles of equity, access to fair and equitable share of atmospheric space and right to development.

7 *ibid*

SWITZERLAND'S STRATEGY FOR INTERNATIONAL COOPERATION 2013-16

The current objectives, principles, instruments and orientation of the Government of Switzerland's international cooperation activities are contained in the Federal Council's Dispatch to Parliament on International Cooperation 2013-2016. It aims at promoting sustainable global development with a view to reducing poverty and global risks. It focuses on themes in which Switzerland has proven experience and strength and takes into account the differing needs of countries and regions. The international cooperation strategy 2013-16 has a strong focus on global challenges and risks associated with the impacts of climate change, food insecurity, water shortages, inadequate access to healthcare and migration, which can restrict development opportunities in developing countries and emerging economies. These challenges and risks are specially addressed by five global programmes of the Swiss Agency for Development and Cooperation (SDC), one of them being the Global Programme Climate Change (GPCC).

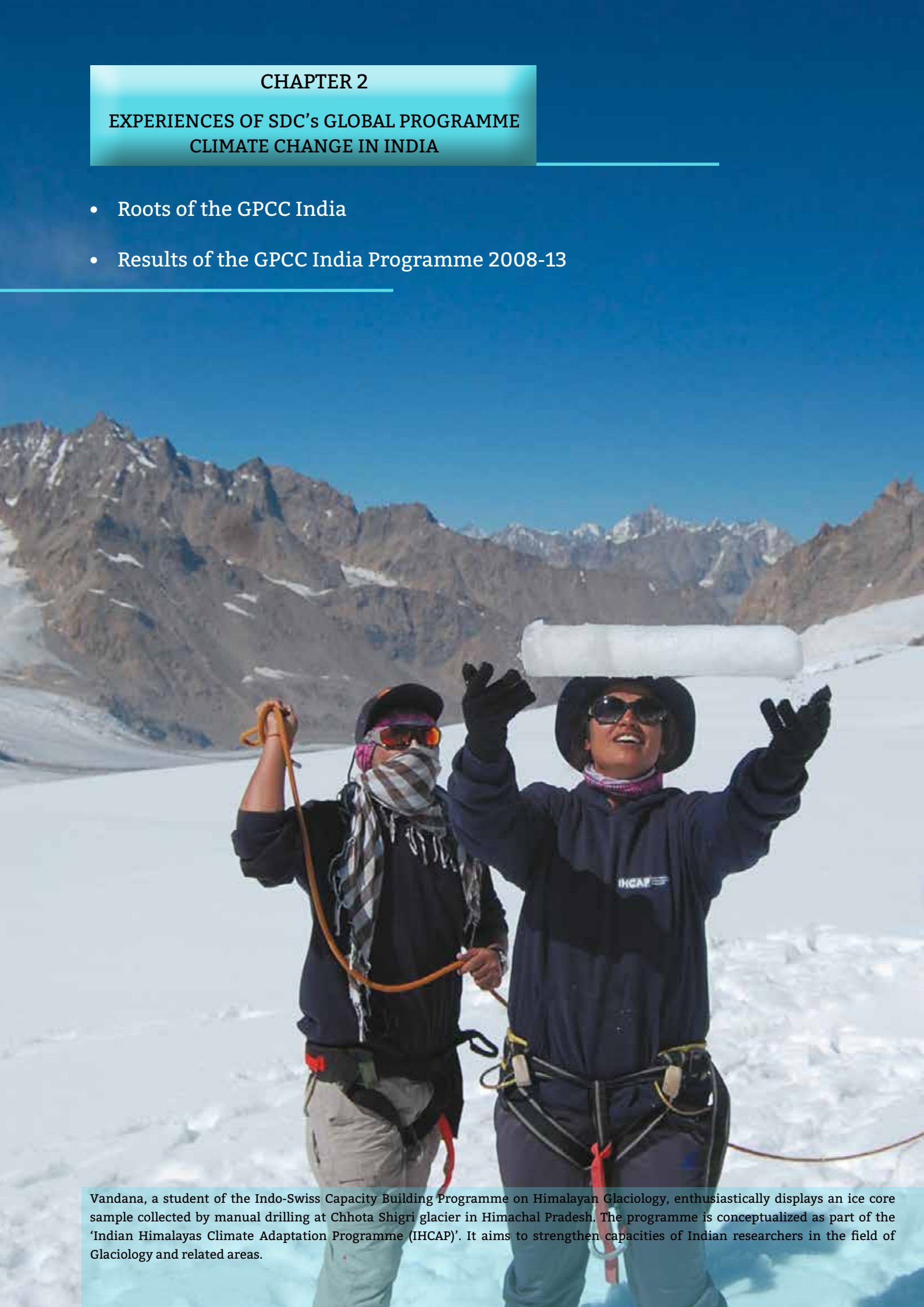
The mission of the GPCC is to contribute to a climate compatible development over the long term. It aims to safeguard development achievements from negative climate change impacts and reduce or avoid greenhouse gas emissions without compromising development goals. The programme supports partner countries in mitigating human-induced climate change and adapting to the impacts of climate change. Implementation is based on a three-pronged approach, which is characterized by innovative action, knowledge sharing and policy dialogue. The GPCC undertakes international cooperation activities in its focal countries- China, India and Peru (covering the whole Andean region) and supports regional and global initiatives.



CHAPTER 2

EXPERIENCES OF SDC's GLOBAL PROGRAMME CLIMATE CHANGE IN INDIA

- Roots of the GPCC India
- Results of the GPCC India Programme 2008-13



Vandana, a student of the Indo-Swiss Capacity Building Programme on Himalayan Glaciology, enthusiastically displays an ice core sample collected by manual drilling at Chhota Shigri glacier in Himachal Pradesh. The programme is conceptualized as part of the 'Indian Himalayas Climate Adaptation Programme (IHCAP)'. It aims to strengthen capacities of Indian researchers in the field of Glaciology and related areas.

EXPERIENCES OF SDC'S GLOBAL PROGRAMME CLIMATE CHANGE IN INDIA

ROOTS OF THE GPCC INDIA

The Swiss Agency for Development and Cooperation has been a partner of India for more than fifty years. SDC started supporting mitigation and adaptation activities under the umbrella of the GPCC in India in 2008. Since then, it has been working to find solutions that address India`s climate change concerns while meeting its development needs. The approach is to drive innovation, share knowledge and inform policy for climate compatible development in partnership with government, research institutes, civil society organizations and the private sector. In India, SDC supports activities at the national, state, local and sectoral levels to cope with the effects of and to reduce climate change.

The adaptation domain has been built by capitalizing on SDC's long-standing experience in India of working with communities on poverty alleviation, rural development and natural resources management. The programmes under this domain focus on building resilience to climate change impacts through science and research, actions on the ground and policy dialogue.

The roots of the mitigation domain can be traced to the initiation of SDC's Global Environment Programme (GEP) in 1991. Based on the experience of promoting energy efficiency in small-scale industries, SDC's work on mitigation focuses primarily on energy, dealing with energy efficiency and renewable energy at the national, state and local community levels to promote low-carbon development pathways.

RESULTS OF THE GPCC INDIA PROGRAMME 2008-13

Between 2008 and 2013, the GPCC India's projects in the adaptation and mitigation domains focused on innovative actions, research and implementation of pilot initiatives. Reflecting on the experience of the first five years of GPCC India's programme (2008-13), it can be concluded that the adaptation and mitigation projects have played an active role in promoting action and informing policy dialogue. Under adaptation, the projects have contributed to raising awareness and building capacities at multiple levels to advance understanding of climate vulnerability and variability and risks and impacts. Under mitigation, the projects have been effective in building capacity and creating knowledge in the field of energy efficiency and renewable energy. The experiences of adaptation and energy projects have also resulted in policy contributions at different levels, including national level policy dialogues.

Key achievements of the GPCC India Programme

- Memorandum of Understanding signed between India and Switzerland for a five-year building energy efficiency project. A novel approach of jointly improving energy efficiency of buildings through integrated design workshops/charrettes established.
- Integration of climate-resilient development pathway with watershed development through advisory services for mitigating climate-induced risks in 51 villages in the semi-arid regions benefitted 9,400 families.
- Participatory vulnerability assessment tools for identifying climate impacts and adaptation options in semi-arid regions developed, tested and implemented in Andhra Pradesh, Madhya Pradesh and Maharashtra.
- Adoption and replication of biomass thermal gasifiers in over 625 micro and small enterprises and diffusion and replication of energy-efficient technologies in over 600 energy-intensive glass, brick-making and foundry units in clusters across the country, leading to a reduction of 7.2 million tons of CO_2.
- Setting up of a national platform aimed at pooling the knowledge and synergizing the efforts of various organizations and institutions to promote clean, energy-efficient technologies and practices in small and medium enterprises (SMEs).
- National policy dialogue on climate change adaptation brought voices of communities, civil society organisations, research institutions and experts to inform the highest echelons of politics and policy makers on climate impacts and resilience measures.

"What will farmers do? Sit and cry? ... if the crop fails you have to go look for work somewhere, don't you?"

-Mirabai Bhima Pore, smallholder farmer, Maharashtra, India.

CHAPTER 3

GOALS AND STRATREGIC ORIENTATION FOR 2014-17

- Strategic Orientation
- Gender and Governance
- Domain 1: Climate Change Adaptation
- Domain 2: Climate Change Mitigation

Twenty-four-year-old Ruby Devi works on her paddy fields in Vaishali district in Bihar. Due to erratic monsoons, the rice re-plantation in her area is often delayed by several days and farmers face the possibility of low yields and crop losses. To protect farmers against such losses, micro-insurance solutions are being developed as part of the project 'Climate Resilience through Risk Transfer (RES-RISK)' through a participatory, composite and flexible approach.

GOALS AND STRATEGIC ORIENTATION FOR 2014-17

The overarching goal of the GPCC India is to contribute to a climate compatible development over the long term in India. It aims to safeguard development achievements from negative climate change impacts and seeks to reduce or avoid greenhouse gas emissions without compromising development goals.

STRATEGIC ORIENTATION

The programme focuses on the two domains of climate change adaptation and climate change mitigation. The overarching goal will be met by a three-pronged approach constituted of 1) innovative actions, 2) knowledge, science and research, and 3) policy.

1) Innovative actions

The GPCC India supports the development and dissemination of innovative solutions at the national, state, local and sectoral levels to cope with the effects of and to reduce climate change. The focus of the engagement lies in areas where the largest impact can be achieved and where Switzerland has proven expertise.

2) Knowledge, science and research

The activities of the GPCC India contribute to generating and sharing climate change relevant knowledge and data. The programme supports joint research and capacity building of scientists. It also capitalizes on and disseminates evidence-based knowledge generated from its adaptation and mitigation projects. This knowledge and data help to improve the innovative actions and inform policy making processes at different levels. Beyond the national level, experience and knowledge is also shared with other developing and emerging countries through South-South cooperation as well as through multilateral processes.

3) Policy

The GPCC India contributes to policy processes by drawing on the results of innovative actions and research. It participates in development of national, state, local and sectoral policies, plans, programmes, guidelines and schemes. To do so, it directly engages in policy dialogue with the relevant policy makers at different levels and indirectly through its implementing partners.

Innovative Actions
Develop and disseminate innovative solutions to address the causes and effects of climate change.

Knowledge, Science and Research
Generate, document and disseminate knowledge produced by joint research and innovative actions.

Policy
Communicate the results of the innovative actions and research work to contribute to policy processes.

GENDER AND GOVERNANCE

Where appropriate, the GPCC India also strives to integrate SDC's cross-cutting themes of governance and gender in its work. Regarding governance, many of the adaptation and mitigation actions concern public investments, government regulation and policies. In particular, institutional development for supporting adaptation and mitigation actions plays a key role. Likewise, gender sensitive analysis and affirmative action will be supported to address the specific vulnerabilities of men and women to climate change impacts and access to clean energy.

"The Swasth Kamal Yojana (community health insurance)has made me aware of the medical insurance benefits and enabled me to claim all my medical expenses."

-Anju Devi, beneficiary of RES-RISK project in Bihar, India.

DOMAIN 1: CLIMATE CHANGE ADAPTATION

The objective of the adaptation domain is to enhance the resilience and adaptive capacities of people, institutions and ecosystems to respond to the impacts of climate variability and climate change in India.

Climate variability and change adversely impact the availability of water resources, agricultural productivity and food and livelihood security. Towards achieving the objective of the adaptation domain, the GPCC India supports research and brings in international expertise to strengthen the ability of institutions and vulnerable communities in India to adjust to a changing climate. The focus areas are water and food security, hazard and risk management in vulnerable ecosystems such as mountains, forests and semi-arid regions. The National Missions, Development Programmes and State Action Plans on Climate Change are important entry points for achieving the objective.

Mainstreaming climate change into development planning and implementation: The GPCC India supports the government at different levels in its mainstreaming efforts by providing expertise, sharing experiences and strengthening the capacities of its partners (national government, state governments and city authorities) to systematically integrate climate risks into planning and policy implementation.

Water and food security: In India, climate change and variability is already changing rainfall patterns, temperatures and causing previously unknown extreme weather events. All these are affecting the availability of water and agricultural productivity. The GPCC India, therefore, focuses on projects that strengthen the capacities of its partners to apply sustainable natural resources management practices and offer climate smart advisory services to vulnerable communities.

Hazard and risk management: Due to rise in temperatures and changes in rainfall patterns, the frequency and intensity of natural hazards like floods, glacier lake outbursts and landslides are predicted to increase. The GPCC India, therefore, supports activities for preventing, preparing for and responding to these risks. It helps to raise awareness among the population and strengthen capacities of the scientific community and government authorities at the state, district and local levels to conduct risk and vulnerability assessments for climate-induced hazards. The development and piloting of risk transfer mechanisms such as innovative insurance solutions for climate change related risks is also supported.

FOCUS AREAS ADAPTATION

Water Security
Sustainable water management practices

Food Security
Climate smart agro-advisory services

Hazard and Risk Management
Vulnerability and risk assessments, innovative risk reduction and transfer mechanisms

DOMAIN 2: CLIMATE CHANGE MITIGATION

The objective of the mitigation domain is to achieve a lower emission development in key sectors in India.

Energy security is crucial for India to attain social inclusion and economic growth. As part of its mitigation domain, GPCC India supports efforts to achieve energy security by sharing best practices and promoting innovations in energy efficiency and renewable energy in key sectors. The focus areas are renewable energy, built environment and small-scale industries. The National Missions, Low-Carbon Growth Strategy and National Programmes/Schemes are the entry points for achieving the objective.

Renewable energy: In the area of renewable energy, GPCC India focuses on enabling energy access. Emphasis is on decentralized application of renewable energy technologies in states that have limited access to electricity. To this end, the formulation of policy and regulatory frameworks at the national and state levels to address capacities, integration and scaling-up of decentralized renewable energy is supported. The GPCC India also strives to promote integration of renewable energy into other sectors (buildings, industries, etc.). The participation of the private sector is promoted for scaling-up renewable energy applications.

Built environment: The rapid development of infrastructure and cities in India is a growing source of greenhouse gas emissions. The built environment is therefore another priority for the GPCC India. It aims at making cities more energy efficient and climate resilient in view of the massive urban transformation and rising demand for energy and other resources. The focus is on improving energy efficiency in the building sector (commercial, public and residential), on strengthening capacities of urban governments for integration of low-carbon strategies into urban planning and on improving the resource efficiency of building materials such as cement.

Small-scale industries: Micro, small and medium enterprises are the backbone of India's economy. In light of this, the GPCC India also focuses on transforming energy use in this sector by assisting fuel substitution from fossil fuels to renewable energy sources and promoting cleaner technologies. The fuel substitution in the micro and small enterprises is, for example, taking place through the scaling-up of biomass thermal gasifiers. The programme further addresses the policy and regulatory frameworks for enabling wider application of the technology. The cleaner technology interventions promote the adoption of energy-efficient technologies and solutions for reducing energy consumption and greenhouse gas emissions in small-scale and medium industries, in particular, in foundry and other metallurgical clusters.

FOCUS AREAS MITIGATION

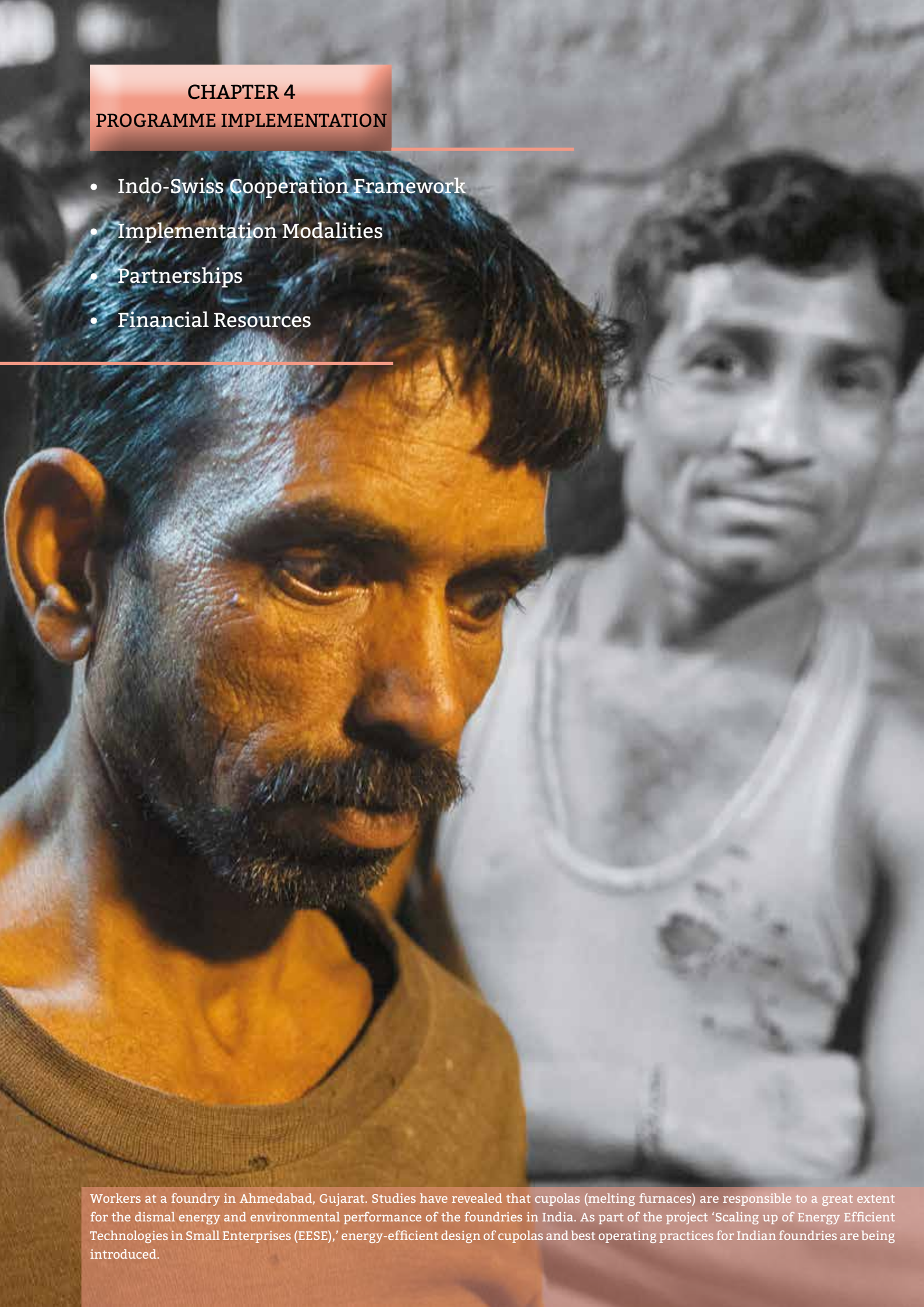
Renewable Energy
Access to clean energy services

Built Environment
Energy and resource-efficient measures and construction materials for buildings and cities

Small-scale Industries
Energy efficient technologies and processes for micro, small and medium enterprises

CHAPTER 4
PROGRAMME IMPLEMENTATION

- Indo-Swiss Cooperation Framework
- Implementation Modalities
- Partnerships
- Financial Resources

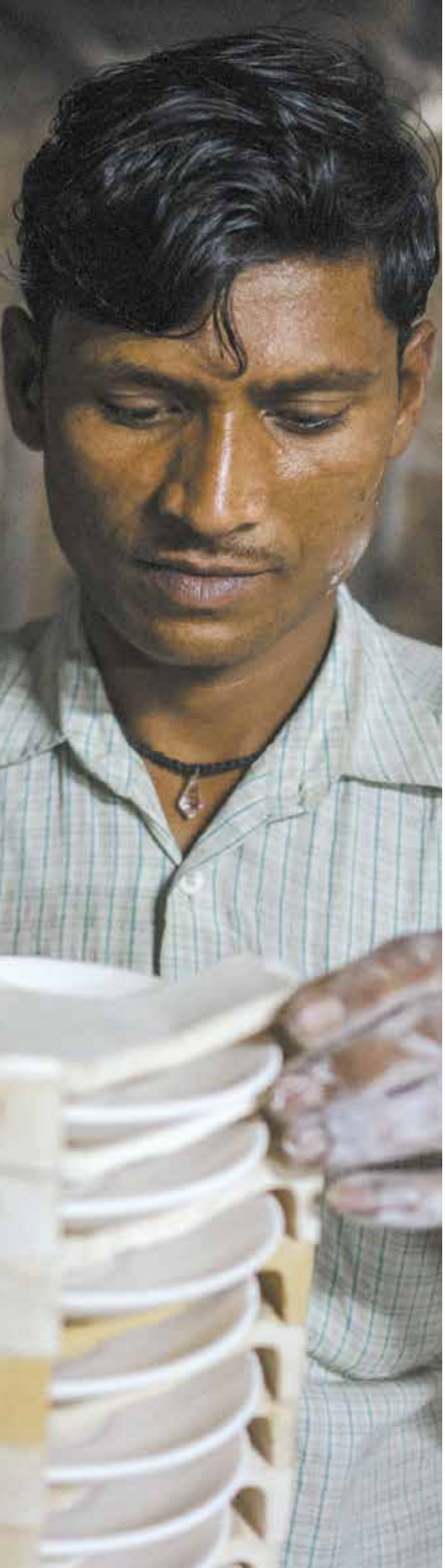


Workers at a foundry in Ahmedabad, Gujarat. Studies have revealed that cupolas (melting furnaces) are responsible to a great extent for the dismal energy and environmental performance of the foundries in India. As part of the project 'Scaling up of Energy Efficient Technologies in Small Enterprises (EESE),' energy-efficient design of cupolas and best operating practices for Indian foundries are being introduced.

PROGRAMME IMPLEMENTATION

INDO-SWISS COOPERATION FRAMEWORK

The existing cooperation framework, within which GPCC India operates, relates to the 1966 bilateral agreement on technical cooperation between Switzerland and India. This bilateral agreement forms the framework for all the programmatic partnerships between SDC and entities of the Government of India, civil society and research organizations. In addition to the 1966 bilateral agreement, there exist a range of Memorandums of Understanding (MoUs) between Switzerland and India, which provide frameworks for the cooperation in a specific area. These MoUs relate to science and technology (2003 and subsequent amendments) with the Department of Science and Technology; biotechnology (1999) with the Department of Biotechnology; humanitarian aid with the Ministry of External Affairs (2003); and building energy efficiency with the Ministry of Power (2011).



IMPLEMENTATION MODALITIES

The core strategy is to create adequate evidence through adaptation and mitigation actions; support science, knowledge and research; and use the results of actions and science to inform policy as outlined in chapter 3. Implementing the strategy requires the following:

- formulation of comprehensive projects which respond to the priorities and are aligned with country systems at the national and state levels,
- engagement at the local and state levels while relating it to national and global policy processes,
- deployment of a balanced mix of implementation modalities and partners,
- building in a certain degree of flexibility to adjust to changing circumstances,
- collaboration and co-financing of projects with multilateral institutions (UN institutions, development banks), bilateral agencies and foundations, and
- transfer of Swiss know-how in domains of Swiss expertise.

PARTNERSHIPS

The two domains of climate change – mitigation and adaptation – are addressed by different national ministries and also by the state governments. However, the overall responsibility of climate change at national and international levels rests with the Ministry of Environment, Forests and Climate Change (MoEF&CC). The MoEF&CC therefore is a key partner for the implementation of the GPCC's India Strategy 2014-2017. In addition, the GPCC India continues to build on its existing partnerships with key national-level stakeholders such as the Bureau of Energy Efficiency (BEE), Ministry of Power; Department of Biotechnology (DBT); Department of Science and Technology (DST); National Disaster Management Authority (NDMA) and National Bank for Agriculture and Rural Development (NABARD), which deal with different facets of climate change in the country.

Going forward, the GPCC India will further strengthen its engagement with central government ministries such as the Ministry of New and Renewable Energy (MNRE), the Ministry of Urban Development (MoUD), the Ministry of Rural Development (MoRD) and the Ministry of Micro, Small and Medium Enterprises (MoMSME). Since the programme strategy focuses on enaging state and urban local bodies, it will work on developing strategic relationships with selected states and cities.

A core strength of SDC in India has been its long-standing relationship with leading development organizations and research institutions in the country. As part of the new strategy, the GPCC India will continue to engage with its startegic partners for scaling-up its activities, and at the same time, it will reach out to new institutional partners (such as foundations, research institutes and private sector) for programme implementation. The GPCC India will also actively engage with other bilateral agencies and multilateral institutions.

FINANCIAL RESOURCES

The resource envelope for GPCC India programme strategy is about CHF 32 million for the next four years. These funds are leveraged by contributions from the Indian government and the project partners.

"The Indo-Swiss Capacity Building Programme on Glaciology was very successful as it helped me in getting a job as a research scientist."

-Pratima Pandey, Participant, Indo-Swiss Capacity Building Programme on Himalayan Glaciology.