Trainer's Manual

Facing the Impacts of Climate Change: Indian SMEs and Adaptation

adelphi

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

SIDBI
भारतीय लघु उद्योग विकास बैंक
SMALL INDUSTRIES DEVELOPMENT BANK OF INDIA

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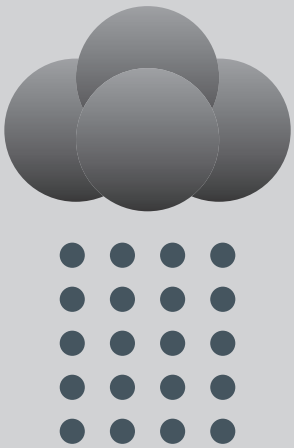
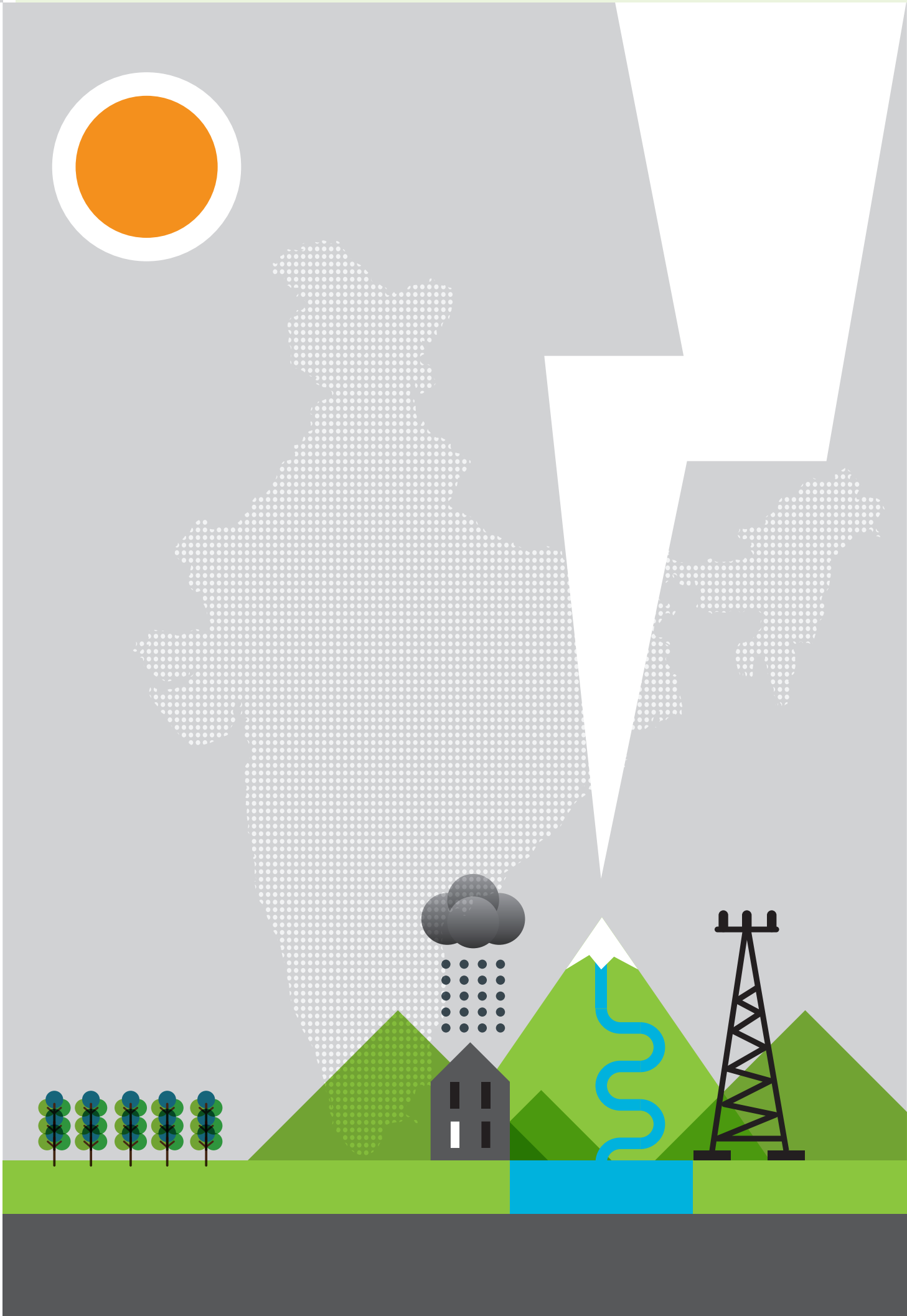




0 Introduction to the training

0.1 Background

0.1.1 Relevance of the topic

Facing the impacts of climate change is a key challenge of this century – not only for governments, but also for communities and businesses. In India, expected impacts are particularly great. Due to its geographic characteristics and its socio-economic conditions, India is one of the most vulnerable countries to climate change worldwide. Rising temperatures, changes in rainfall patterns, rising sea levels and more frequent and more intense extreme weather events such as floods, droughts or cyclones can already be observed, and are projected to intensify in the future. These impacts will affect the fundamentals of India's natural environment, with strong repercussions for its society and economy.

It is essential to prepare for climate change impacts which can be felt already today, and for likely impacts in the future. The business sector in India, and in particular the large number of small and medium enterprises (SMEs), plays an important role for the Indian economy. Businesses which prepare for, or "adapt" to, climate change impacts, first and foremost assure their business survival in times of a changing climate. Businesses can be severely threatened both by gradual changes such as slowly rising temperatures, and by single extreme weather events such as heavy rains and flooding. Companies can also make use of business opportunities resulting from a changing climate, e.g., by developing adaptation products and services for people and organisations.

SMEs in India are particularly vulnerable to climate change, as many rely on old machinery, have limited awareness and skills on issues such as resource efficiency, and are located in areas with insufficient infrastructure. Impacts can affect their physical infrastructure, production processes and supply chain, their employees and neighbouring communities, but also the demand for their products and their access to finance. Indian SMEs often lack the resources to assess, monitor, and adapt to climate change related risks. As the capacity to deal with financial losses or business disruptions is relatively low, climate change impacts can even threaten SMEs' business survival.

The impacts of climate change are already felt by SMEs today, for instance the frequent energy and water shortages in summer months. SMEs do, however, not yet connect these impacts to climate change, neither are they developing response strategies for adapting to projected impacts. To address climate related risks and opportunities, many companies – particularly SMEs with limited resources – will start with single adaptation measures such as the construction of a dyke to protect company premises from flooding. A more advanced approach consists of developing a comprehensive adaptation strategy which combines measures in the short-, medium- and long-term and can even involve changes to the overall business strategy, including the company's portfolio of products and services.

0.1.2 Background of the training programme

This Trainer's Manual aims to support trainers in conducting effective training programmes on climate change adaptation (CCA) for Indian SMEs. The methodology and tools presented in this manual build on the practice-oriented approach to CCA developed for the Climate Expert website (www.climate-expert.in). The key feature

of the website is the online learning programme "Becoming a Climate Expert" which seeks to raise the awareness of SMEs on the importance of developing a CCA strategy and provides tools for companies to assess climate related risks, identify opportunities and develop adaptation strategies. Given the novelty and complexity of the issue SMEs will need additional training and consulting services to successfully adapt to climate change. This training manual forms part of a larger capacity building toolkit on CCA of Indian SMEs (see Chapter 0.3).

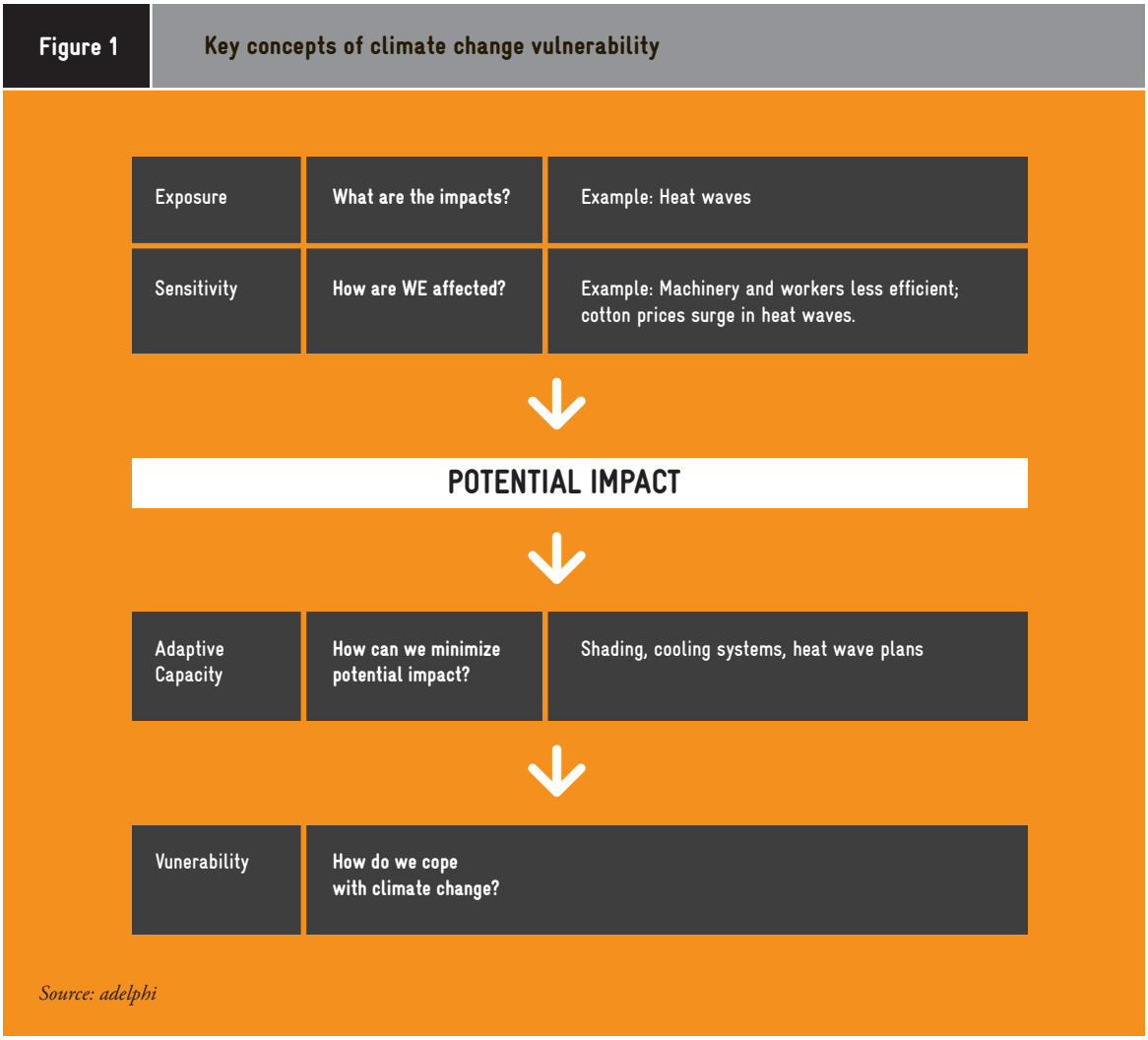
The CCA methodology, its tools and the Climate Expert website have been developed within a series of projects on CCA and SME competitiveness by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and its knowledge partner adelphi. Multiple workshops and site visit assessments laid the groundwork for the CCA methodology and tools. In addition, two studies on climate change risks and opportunities of adaptation were developed.

0.2 Methodology for developing an adaptation strategy for businesses

The methodology for CCA strategy development spells out key steps and assessment methods for developing a CCA strategy for SMEs. It helps to assess a company's vulnerability to climate change as well as identify options for reducing this vulnerability. In addition, it allows for the identification of potential opportunities.

The **vulnerability** of a company is the result of its sensitivity to climate change impacts (determined by the exposure to climate change) and its adaptive capacity. These concepts are illustrated in Figure 1.

Figure 1 Key concepts of climate change vulnerability



Source: adelphi

In developing a CCA strategy, **four main steps** have to be taken (see Figure 2).

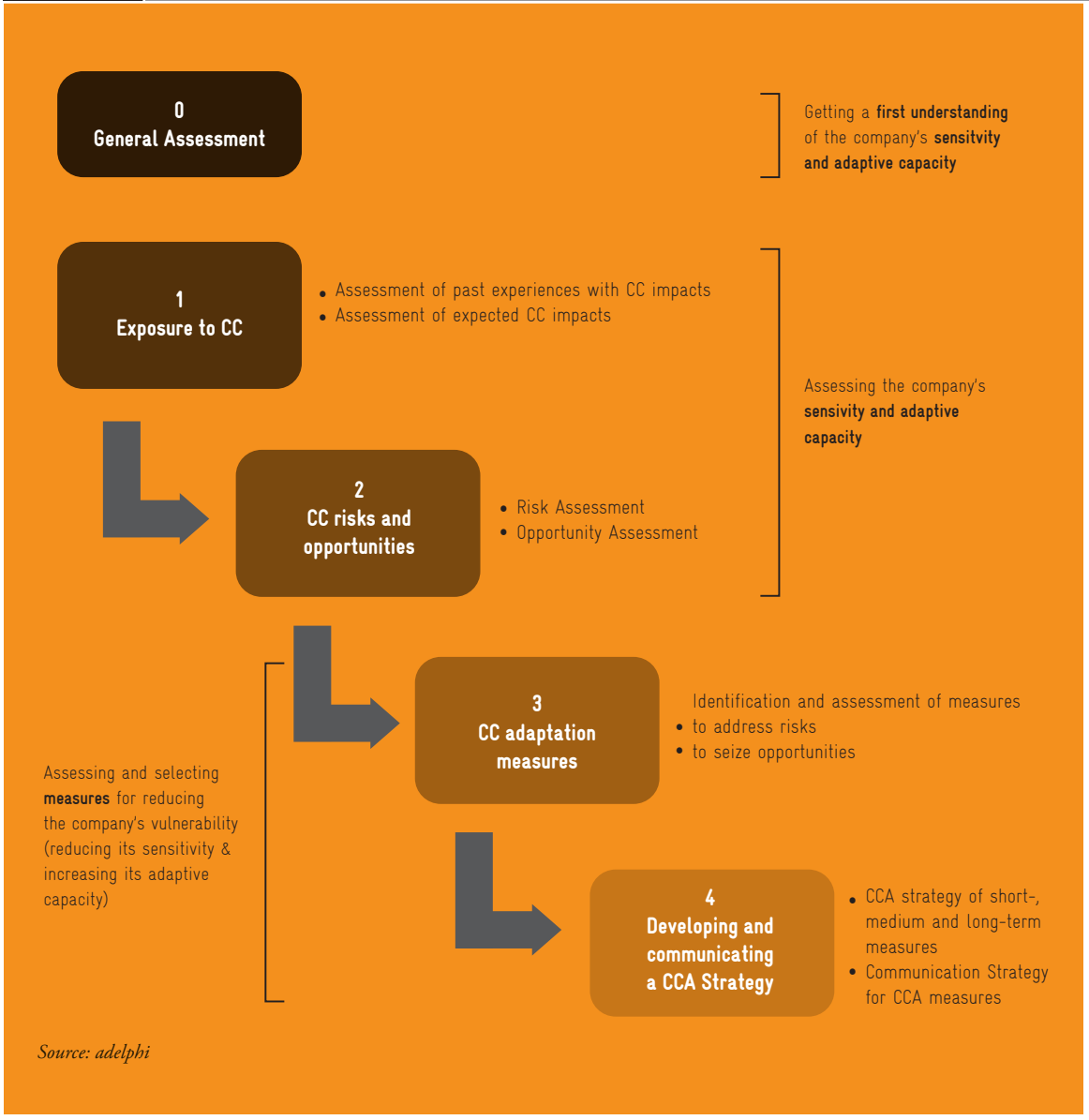
1 First of all, it is necessary that the company knows about which climate change phenomena must be dealt with in the regions relevant to its business (→ exposure). This includes the company locations, but also locations of key suppliers, transport routes and major markets.

2 The company can then assess what impacts these phenomena exactly have on the company (→ sensitivity and adaptive capacity), and prioritise resulting risk and opportunities.

3 Based on this knowledge, a business is ready to identify potential adaptation measures and assess and prioritise these according to their potential for risk reduction, feasibility and side effects.

4 For a full-fledged adaptation strategy these measures are assembled in an adaptation plan which combines measures in the short-, medium- and long-term to achieve effective adaptation, while making optimal use of synergies between different measures. An accompanying communication strategy towards internal and external stakeholders allows the company to gather ideas and create ownership among company staff in its adaptation efforts, demonstrate its adaptation efforts towards governmental authorities, business partners and neighbouring communities, and network with others on the issue of CCA.

Figure 2 Key steps in CCA strategy development



Source: adelphi

0.3 The capacity building toolkit on adaptation for Indian SMEs

As noted above, this training manual forms part of a larger capacity building toolkit on CCA of Indian SMEs. The material for this training programme comprises of the training slides, the Trainer's Manual and a related Consultant's Manual. Additionally, the Climate Expert website provides information and further resources on all topics of the training.

The methodology and tools of the training programme build on the practice-oriented approach to CCA developed for the **Climate Expert website** (www.climate-expert.in). The Climate Expert is an e-learning programme which seeks to raise the awareness of SMEs on the importance of developing a CCA strategy and provides practical tools for companies to assess climate related risks, identify opportunities and develop an adaptation strategy. Given the novelty and complexity of the issue it can however be assumed that for SMEs to successfully adapt to climate change, using this website is not sufficient alone, but needs to be accompanied by additional training and consulting services. Many modules of the training programme directly relate to the Climate Expert, which contains extensive information and further reading materials on the topics of the training. It is highly recommended that trainers thoroughly work through the programme.

As part of the Climate Expert, **worksheets** have been developed that can be used by companies individually or in a consulting situation. These worksheets are a very useful source of information for trainers, familiarising them with a structured approach on how to develop an adaptation strategy. Their purpose, content and application are spelled out in detail in a separate **Consultant's Manual**. In those sections of the Trainer's Manual where the CCA methodology and worksheets are introduced, links are given to the respective sections in the Consultant's Manual.

The modularised **PowerPoint slides** for the training can be used for training sessions of different length. Options for this are described in more detail throughout the manual.

This **Trainer's Manual** features the complete set of slides with additional explanations, tips, background material and hand-outs. In addition, there is a chapter on training methodology which covers organisational issues, hints on training methods and on effective and efficient training management, including the monitoring and evaluation (M&E) of the training programme. A template for a feedback questionnaire on the training is enclosed.

Part of the training material is a **case study** of a textile company based in Faridabad. The case study is based on several company assessments as well as group discussions with representatives of textile companies in the area. It portrays the impacts that a company experiences in times of heat waves and showcases potential adaptation measures. The impacts on the company can be used as a starting point for the training to raise the awareness of participants to the business relevance of the training; also, it can serve to illustrate key concepts and approaches of CCA, and it can be used as a case company in exercises.

On the Climate Expert website, **two studies** commissioned by GIZ and conducted by adelphi / Ernst & Young India can be found. One study focuses on the risks faced by Indian SMEs in times of changing climate, whereas the other investigates new opportunities that might arise. Both studies are highly recommended readings for trainers.

Through the combination of capacity building material for SMEs, trainers and consultants, the toolkit seeks to strengthen the environment for promoting CCA of Indian SMEs. While building on the same methodology for CCA of Indian SMEs, the materials follow slightly different logics and structures. This is due to the fact that they serve different purposes and address different target groups, as highlighted in Figure 3.

Figure 3 Comparison of Climate Expert online learning platform, Trainer's Manual and Consultant's Manual

	Climate Expert online learning programme	Trainer's Manual	Consultant's Manual
Objective and target group	Build awareness and skills of MSMEs in CCA	Build expertise and methodological know-how of trainers to implement effective training programmes on CCA targeted at MSMEs	Build expertise and methodological know-how of consultants who develop CCA strategies with their company clients
Key methodological considerations	• Simple language • Options for quick access to key contents • Strong guidance in applying the CCA methodology by means of an etool	• Rich source of reference and guidance for training contents and methods • Adaptability to different training objectives, time frames and target groups	• Extensive guidance on how to tailor and apply the CCA methodology and worksheets in a specific company context
Structure	0 Overview 1 Introduction to CC 2 Understanding CC impacts on business 3 Identifying CC impacts on business 4 Assessing adaptation measures 5 Implementing & monitoring an adaptation strategy	0 Introduction 1 Introductory session 1&2 2 Building awareness of MSMEs on CC and its impacts on business 2–4 3 Building practical skills of MSME for developing adaptation strategies 4 Wrap-up, feedback and outlook 1–4 5 Case study on CCA* 6 Training methodology * The case study can be used to illustrate all steps in CCA strategy development	0 Introduction 2 1 Sensitivity and adaptive capacity to climate change – Assessing impacts on the company 2 Deciding on the development of a CCA strategy 1 3 Exposure to climate change – Assessing past experiences and expected changes 2 4 Climate change risk and opportunities 3 5 Adaptation measures 4 6 Developing and communicating an adaptation strategy

Source: adelphi

(Note that the numbers in orange bubbles refer to the key steps in CCA strategy development introduced above.)

In case you did not participate in a Training of Trainers (ToT) workshop, we strongly recommend that you visit the online learning programme first and work through all the modules.

0.4 The capacity building toolkit on adaptation for Indian SMEs

0.4.1 Objectives and target group of the training programme

The overall objective of the training programme and the other materials and tools developed under this initiative is to prepare Indian SMEs for dealing with climate change impacts. Raising their awareness to the real dangers to business growth and survival that climate change poses, but also to the opportunities that could arise, the training programme has the core aim of improving the competitiveness of the Indian SME sector. For this purpose the training programme seeks to:

- Build awareness on climate change and its impacts on Indian SMEs and
- Develop practical skills for identifying and assessing risks and opportunities resulting from climate change impacts as well as determining effective adaptation measures for a company.

The specific target group of the training is Indian SMEs in sectors which are highly sensitive to climate change impacts. An assessment of different SME sectors' sensitivity to climate change impacts can be found in the study "Facing the Impacts of Climate Change" developed under the GIZ initiative and available for download on the Climate Expert website.

The training programme takes a modular approach which allows for a flexible combination of contents and methods to adapt the programme to the group of participants and the available time frame (see Chapter 0.4.2 for details).

0.4.2 Trainer's Manual – approach and structure

Figure 4 Approach of the training of trainers programme

The manual combines three components to enable trainers to effectively build the knowledge and skills of SMEs to adapt to climate change:

- Information on climate change impacts on business and strategies for adaptation;
- Information and guidance on application of tools for CCA strategy development;
- Information and guidance on training methodology.

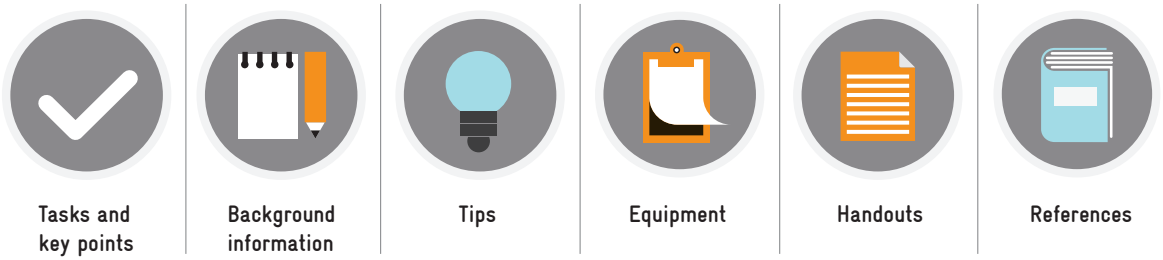
Source: adelphi

The "Trainer's Manual – Facing the Impacts of Climate Change: Indian SMEs and Adaptation" has been developed to help trainers conduct successful workshops with participants from Indian SMEs. By providing sets of slides and background information on key topics and tools of CCA in a business context, illustrated by a company case study, the Trainer's Manual:

- Supports trainers in explaining the most important facts about climate change and its impacts on businesses. At the same time abundant reading recommendations stimulate further research (**Awareness Raising** – see Chapter 2).
- Gives guidance on how to practically apply CCA tools for developing an adaptation strategy. By that, it enables trainers to master all problems and questions that arise when it is time for participants to develop their own strategies (**Strategy Development** – see Chapter 3).

The Trainer's Manual also offers **methodological advice** to the trainers:

- At the outset of each module a **"session overview"** sums up the key objectives, topics and methods employed in each module.
- For the three substantial modules, Chapters 2, 3 and 5, a **"trainer's reading"** is provided which elaborates on the relevance of the module as well as the rationale behind choosing the specific contents and methods, and outlines important points to consider for effectively training SMEs on these topics.
- Each slide presented in the manual is supported by **further information for the trainer**:



- **Green-coloured "tailoring boxes"** provide tips on how trainers can adapt modules or single slides to tailor the programme to the interests, background and expectations of participants;
- **Orange-coloured "interaction boxes"** give hints on how trainers can present the content of the slide in a more interactive manner;
- **Grey-coloured "case study boxes"** present ideas on how to make use of the case study provided in the training material to illustrate training contents or conduct exercises;
- Designated **slides for discussions and exercises** with accompanying information instruct on how to conduct the interactive elements in the training and overcome potential challenges;
- A separate **chapter on training methodology** (Chapter 6) gives abundant information on how to prepare and conduct the training programme and continuously improve its quality;
- **Links to the Consultant's Manual for CCA consultants** – a separate manual introducing in detail the assessment methodology, tools and their application by consultants – allow the trainer to develop a more in-depth understanding of the CCA methodology applied in this training programme.

This Trainer's Manual follows a modular approach (see Figure 5).

While planning a training programme, the trainers can combine the material in a way which best suits the objectives and time frame of the workshop and the specific needs of participants. The manual hence allows for an easy and time-efficient preparation both of CCA awareness raising and of CCA strategy development programmes, or a combination of the two.

Figure 5 **Structure of the Trainer's Manual**

Module 1: Introductory session

Module 2: Building awareness of SMEs on climate change and its impacts on business

- Introduction to the dynamics of climate change
- Understanding past and projected impacts in India
- Understanding impacts of climate change on Indian SMEs

Module 3: Building practical skills of SMEs for developing adaptation strategies

- Mitigation and adaptation – why are they relevant to businesses?
- Conducting a climate change risk assessment
- Identifying opportunities
- Adaptation measures – Types, examples and benefits
- Exercise: Identifying measures for your businesses
- Developing an adaptation strategy

Module 4: Wrap-up, feedback and outlook

- Wrap-up and feedback
- Outlook: The Climate Expert e-learning platform

Module 5: Case study on climate change adaptation – the example of "IndTex"

- Introducing "IndTex": Profile of the case company and the heat wave challenge
- Impacts of heat waves on "IndTex"
- Adaptation measures of "IndTex"

0.5 Adapting the training programme to your target group

As an experienced trainer you know that one key success factor of any training workshops is that the training contents and methods have been tailored to the specific needs, interests and expectations of the participants. The modular approach of this training toolkit and the methodological hints provided facilitate such an adaptation to your target group.

A first step in adapting your training programme is to **adjust the wording** to prior knowledge, interests and skills of your target group. For instance, climate change phenomena are often described in quite a technical language; a group of environmental engineers will find descriptions such as "rise in mean annual precipitation" appropriate, while for participants with a less extensive educational background and less awareness of climate change issues the phenomenon might be better described as "as a tendency, there will be more rainfall every year".

Furthermore, you can **make a selection from the slide material** so that the programme best suits the participants' needs and expectations as well as the specific objectives and time frame of the workshop. Depending on your target group and time frame, you will decide to go into more technical detail of CCA risk assessment and adaptation measures, or you will select slides to offer a general introduction and awareness raising.

A **choice also has to be made regarding the methods** to be employed. While the training slides and manual propose the use of specific methods throughout the training programme – presentations, discussions, illustrations via case studies and best practice examples, and different forms of exercises – you are free to adapt these methods if you consider a different approach more suiting for the target group. For instance, if you have a workshop with a group of technical staff at similar hierarchy levels who already have participated in an awareness raising workshop and now want to learn more about the practical application of the CCA tools, you might include additional exercises in the programme. But: do not forget to **adjust the time frames** calculated when adding discussions and exercises!

In addition to these general considerations in adapting your training material there are some specific components of this training programme which require to be reviewed before a training in light of the needs and interests of each specific group of participants:

- **Climate change data:** The slides in Module 2 of this manual contain data on past and expected changes in the climate relevant for all India as well as regional data for the Delhi/National Capital Region area. If you hold workshops with participants from other regions in the country it is recommended to include climate change data for these regions instead.
- **Examples of practical application:** Many slides in Chapter 2 and Chapter 3 contain practical examples of climate change impacts on SMEs and adaptation measures implemented by companies. These examples should be reviewed before each training programme to see if they are relevant for your specific groups of participants, and adapted accordingly.
- **Case study:** A case study is included in the material which can be used to translate key concepts and approaches of CCA to the practical level, and serves as a case company in exercises. The case shows climate change impacts and adaptation measures of the hypothetical textile company "IndTex" located in the Faridabad area near Delhi. Depending on the sectors your participants are active in, this case study might be more or less informative and inspiring. For participants from a completely different sector it can be worthwhile to adapt or even replace the case study with a different example.

In the slide material presented in this manual, green coloured **"tailoring boxes"** give hints where contents or methods should be adapted to the specific target group of your training. Additionally, for 4 key topics detailed hints on putting this tailoring into practice are presented in the boxes below.

- Box 1: How to adapt training contents and methods to your target group
- Box 2: How to make climate change relevant for SME decision-makers
- Box 3: How to adapt the case study to your target group
- Box 4: How to collect information on climate change relevant to your group of participants

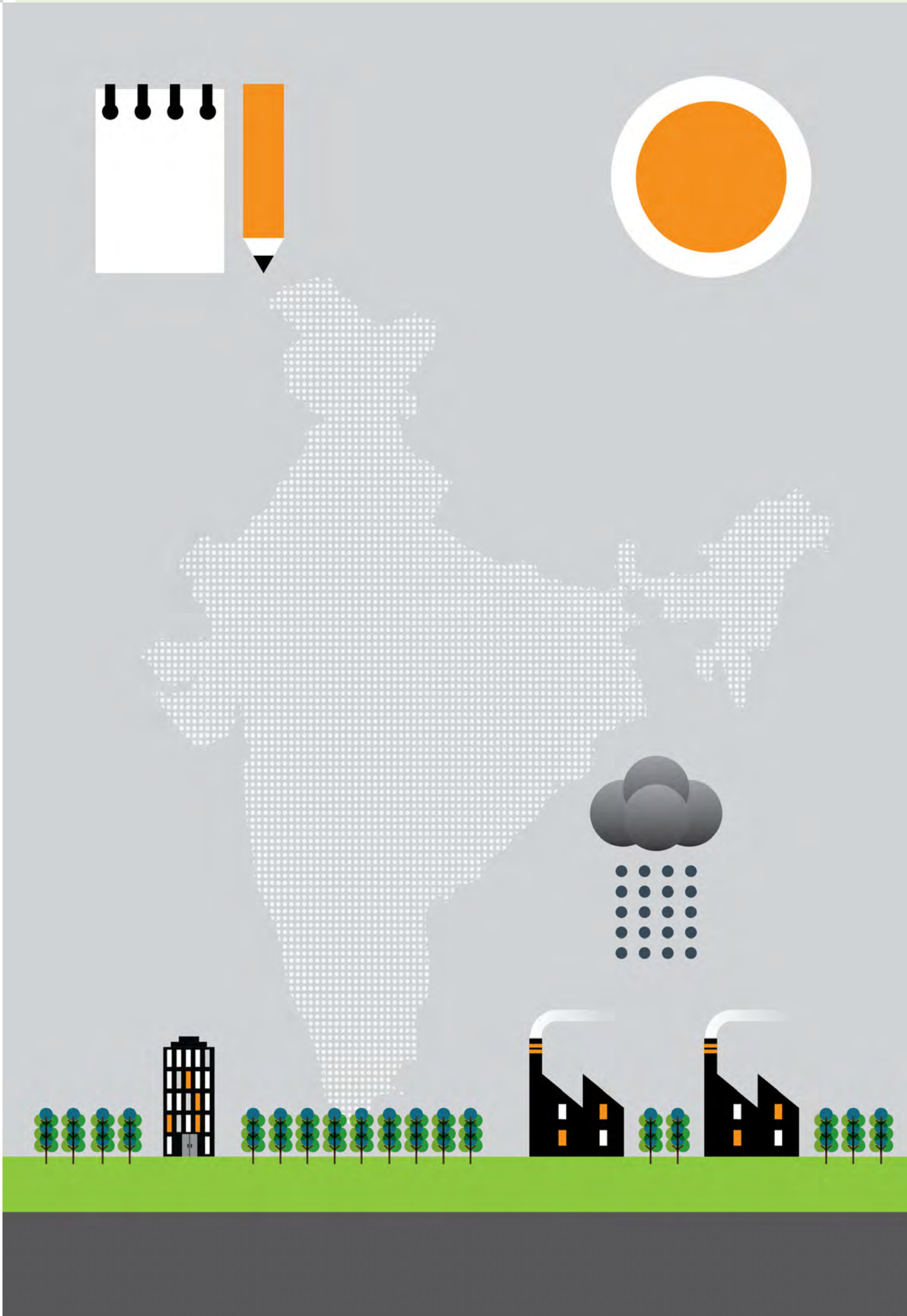
You will find references to these boxes throughout the manual.

Box 1	How to adapt training contents and methods to your target group
Why is it important?	Knowing your participants' expectations, needs and constraints allows you to use examples and training methods which are targeted specifically to your participants. By involving them and relating to their experiences you keep them interested and attentive, and enable them to transfer training contents to real life situations.
What do you need?	In order to adapt the training contents you need to first find out the most important facts about your target group: Which **knowledge and experiences** do they already possess (position in the company, years already worked in the relevant field, previous trainings taken, etc.)? Which **expectations** do they have of the training (concepts, tips for practical application, networking, etc.)? Which **characteristics and personal interests** do they have? What is their cultural background, age, fields of interest, etc.? When you have gathered all relevant information, you should: Check all contents on their suitability and relevance; if necessary, adjust the approach or materials of the training; e.g., the extent/technicality of the climate change information session. Prepare different options from which the participants can choose or which you will apply according to specific circumstances (e.g., preparing a topic both as lecture and as participatory activity, making up two or more different scenarios for role play, bringing in background material and brochures with different focuses, organizing room setup according to group size, etc.).
How much time should you anticipate?	Adjusting the training can take as little as an hour or as long as a day – depending on the needs and expectations of the target group vs. the training materials. You should do target group assessments twice: • Assess your target group as explicitly as possible before the training and prepare accordingly. More information can be found in the Methodology section. • Find out about specific needs at the beginning of the training and cater to them as closely as possible.
What are common problems and how can they be solved?	You might not have enough relevant information about your participants' experiences, objectives and characteristics. In order to solve this problem you could include a mandatory questionnaire in the application form for the training; you could conduct telephone interviews with a small but representative group of participants before the training or send out voluntary questionnaires before the training; for the training you could prepare two or more options from which you can choose the most appropriate one after having inquired about participants' needs at the beginning of the training. Target groups might be too heterogeneous to consider all levels of knowledge and objectives. You could level participants' knowledge through small group sessions, having experienced participants lead and facilitate group work. This way they stay involved and others can benefit from their knowledge.

Box 2	How to make climate change relevant for SME decision-makers
Why is it important?	Top management/the owner of a company has the final say when it comes to the introduction of measures regarding climate change (adaptation and mitigation). No matter how convincing the case/the training material is, the final decision lies with them. If the decision makers fully understand the need to tackle climate change, commitment of the whole company will increase. Climate considerations could even become part of the company's core business.
What do you need?	You need to convincingly present that the survival and growth of a company are at stake. In order to prepare realistic future scenarios and options you need to gather information about aspects of the company which are likely to be affected by climate change. These are, for example, • Physical assets: climatic conditions of the site, building infrastructure, requirements of the manufacturing machinery • Business operations: resource use and availability, storage system, staff needs, climate change resilience of suppliers and customers Such information needs to be quantifiable and comparable (e.g., energy use for cooling in kWh, water use for production in m^3, revenue from sales in INR/USD, etc.).
How much time should you anticipate?	You should plan well ahead in order to integrate the most important considerations for participants from a specific region or sector. Among them are changing resource availability, customer demands and government regulations or new products and processes.
What are common problems and how can they be solved?	• Decision makers might be preoccupied only with the economic success of the company and see CCA as an environmental or even philanthropic issue. In order to solve this problem you should clearly explain possible negative effects from climate change on survival and growth of the company and give examples of win-win situations from within or outside the company • Decision makers might have too little time or knowledge in order to get acquainted with adaptation measures. You should present and discuss different measures in terms of economic viability and environmental impact and provide step-by-step explanations.
How can you improve your past efforts and strengthen future results?	In order to strengthen your future results you should first of all analyse the profile of your participants. Maybe they are already facing climate change impacts that you could collect beforehand. The knowledge can help you prioritize your search. Prior your data collection you should identify qualified sources to save research time. Do not discard the data you collected, you might be able to use it again for another workshop.

Box 3	How to adapt the case study to your target group
Why is it important?	Depending on your target group, the climate change impacts and the vulnerability of their business might vary. For a company in the chemical industry different factors might apply than for a company in the textile sector. To offer the largest benefit to your participants you should therefore adapt the case study to your target group to make it more applicable. Hence, the participants will be able to relate the information presented in the case study to their businesses and gain a major understanding of how impacts of climate change can affect their businesses.
What do you need?	Try to invite participants from one industry to tailor the case study according to their needs. To adapt the case study to your target group you first of all need information on projected climate change impacts for the respective region. For more information on finding qualified climate change data, read Box 4. You need to identify risks the companies might face. Use the websites of the companies represented in the workshop to get more information in order to adapt the case study to your target group. The following sources present a small selection of channels that can be used to tailor your case study: • Environment Agency (http://www.environment-agency.gov.uk/research/planning/108348.aspx) • Climate Change Adaptation Resource (http://www.climatechangeadaptation.info/case-studies/)
How much time should you anticipate?	The time you should anticipate for adapting the case study to your target group depends on the composition of your group of participants. If you have to adapt the case study for different target groups, the time used might be longer. For adapting the case study to one target group, you should anticipate at least one working day of preparation. Make use of data collected previously.
What are common problems and how can they be solved?	Problems that might arise during the adaptation of the case study can be related to plausibility. The case study has to follow a logical order. Hence, the amount of work might be quite high. Use existing sources to minimize your work. Consult relevant stakeholders to check whether your case study is logical.
How can you improve your past efforts and strengthen future results?	In order to maximise the benefit of your case study you should ask your participants for their feedback on the case study. The assessment done during the workshop should be used to further improve the case study. Do not discard your data collected, you might be able to use it again for another workshop.

Box 4	How to collect information on climate change relevant to your group of participants
Why is it important?	In order to conduct an effective training you should be able to understand the major climate change impacts for the region that (most) of your participants come from. As climate change impacts are diverse, this may vary considerably. The collection of data helps you gain an understanding of the major climate impacts for the respective region and the degree of this impact. This increases the relevance for the participants and enables you to better assess the vulnerability of the businesses of your participants.
What do you need?	To collect information on climate change you need reliable data. Most of the data you can find on the internet, but in order to collect valid data you might also have a look at current studies or other literature sources. The following sources only present a small selection of channels that can be used to collect information on climate change: • National Climatic Data Center (http://www.ncdc.noaa.gov/) • Intergovernmental Panel on Climate Change (www.ipcc.ch/) • Climate Change Knowledge Portal (http://sdwebx.worldbank.org/climateportal)
How much time should you anticipate?	The time you should anticipate for the collection of data depends on the group of participants. If you have to collect data for several regions, the time used might be longer. For analysing the climate change impacts for one region, you should anticipate at least 2 hours of preparation.
What are common problems and how can they be solved?	Problems that might arise during your research can be related to contradictive data. To solve this problem you should only use quantified data by trustworthy sources. Some of the data sources might not be free of charge. Try first to exploit free sources before using sources for which you have to pay. In any case it is recommended to consult several sources for compiling your data.
How can you improve your past efforts and strengthen future results?	In order to strengthen your future results you should first of all analyse the profile of your participants. Maybe they are already facing climate change impacts that you could collect beforehand. The knowledge can help you to prioritize your search. Prior your data collection you should identify qualified sources to save research time. Do not discard your data collected, you might be able to use it again for another workshop.



1 Introductory session

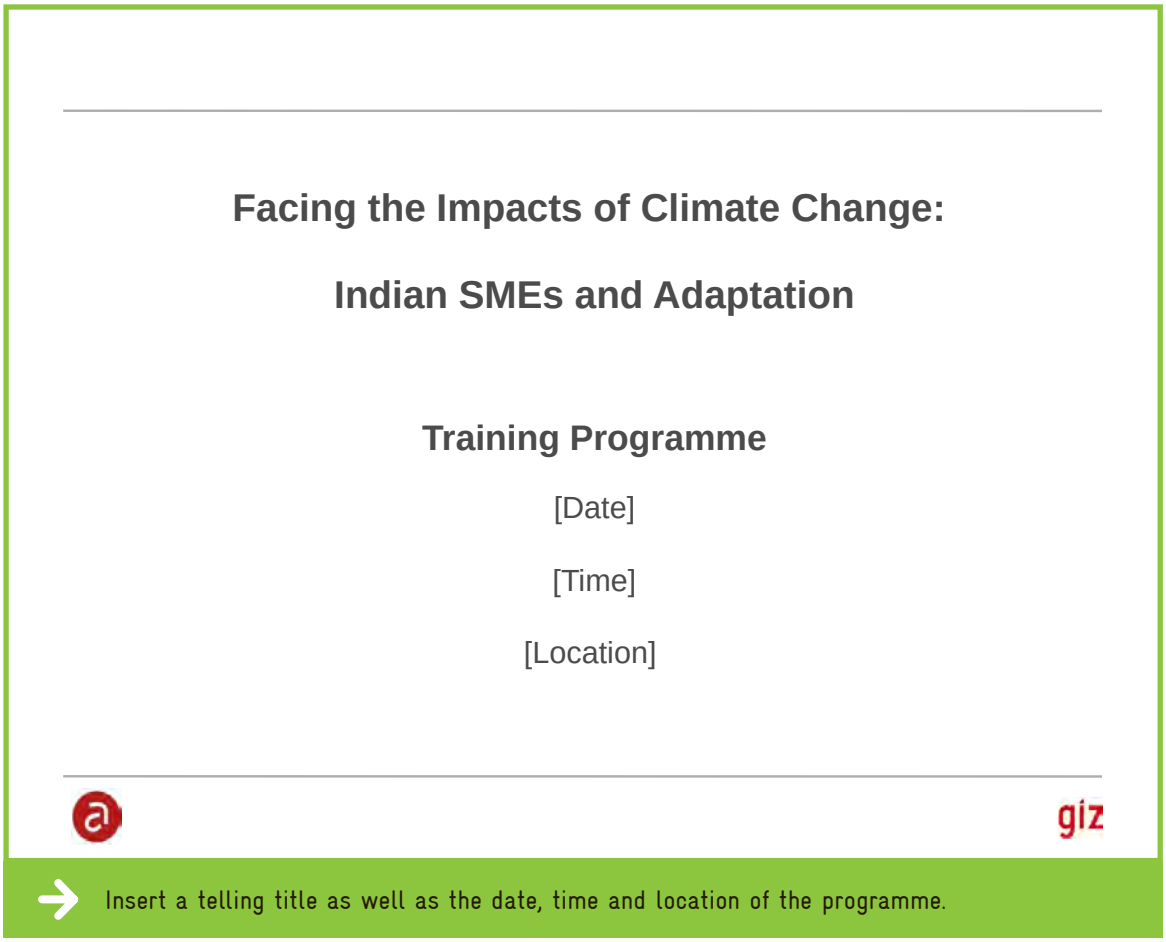
1.1 Overview of the module

Key Topic	The introductory module gives participants and trainers an opportunity to get to know each other and clarify expectations of the training. Taking sufficient time for the introduction of a training programme is a key to a successful training. Starting strong will keep participants engaged throughout the workshop!
Objectives	• To get to know participants and allow them to get to know each other • To learn about the participants' expectations regarding the training • To introduce the agenda and clarify organisational issues After completion of the module, • Participants are familiar with the trainer and other participants • Participants know the training objectives and schedule • The trainer is aware of the participants' expectations to the training and can – integrate these into the training programme and/or – clarify which expectations can and which cannot be satisfied
Duration	30 min (but ultimately depending on group size)
Methods	Presentation, moderated discussion
Equipment	Projector, notebook

Session Schedule

Time	Topics of the module	Key material
5 min	**Words of welcome** Welcoming participants and introduction to the objectives of the training programme	Ppt slides 1
20 min	**Introduction of participants** Participants introduce themselves outlining their professional role, acquaintance with CCA and their motivation to attend the training	Ppt slides 2
5 min	**Introduction of the trainer and the agenda** Introduction of the trainer and overview of the training agenda and in how far it will meet the participants' expectations	Ppt slides 3

1.2 Slides for the presentation



Insert a telling title as well as the date, time and location of the programme.

- Welcome participants.
- Briefly introduce yourself and, if applicable, other trainer(s).
- Describe the overall contents and objectives of the training.

Take sufficient time – the introduction of a training programme is the basis of a successful training.

The training was designed to help Indian SMEs adapt to the impacts of climate change. It includes 1) a theoretical part which creates awareness on climate change and 2) a practice oriented part which allows participants to transfer knowledge into adaptation strategies.

The training is based on the e-learning tool Climate Expert which was developed by GIZ in cooperation with adelphi. The Climate Expert seeks to raise awareness of SMEs on the importance of developing a CCA strategy and provides practical tools for companies to assess climate related risks and opportunities and develop adaptation strategies.

Climate Expert: *http://www.climate-expert.in/*
GIZ: *http://www.giz.de/en/*
adelphi: *http://www.adelphi.de/en/start/aktuell/43496.php*

Depending on the group, you can also add other, more casual topics, for example a question about their favourite hobby or the place of their last vacation.

This method suits for introduction rounds with less than 20 participants. Numerous other methods exist for conducting introductory sessions, including for larger groups (see Chapter 6.3.2). Note that depending on the method the duration of the session might need to be adjusted.

- Ask participants to introduce themselves in a brief round of introduction, following the topics indicated in the slide.
- Take notes for your own reference.

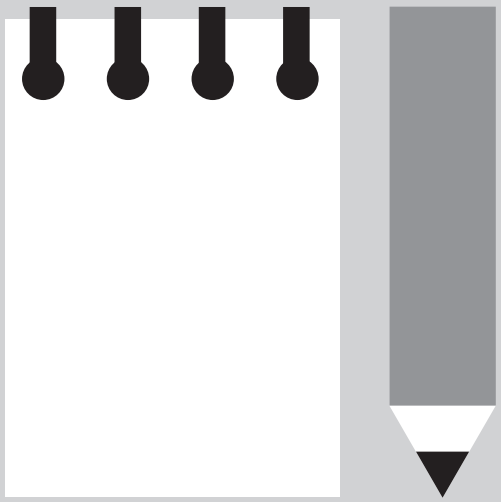
Be careful not to ask too much of your participants in terms of motivation and expectation; many might have only a very vague idea of CCA or confuse adaptation with the issue of climate change mitigation (CCM).

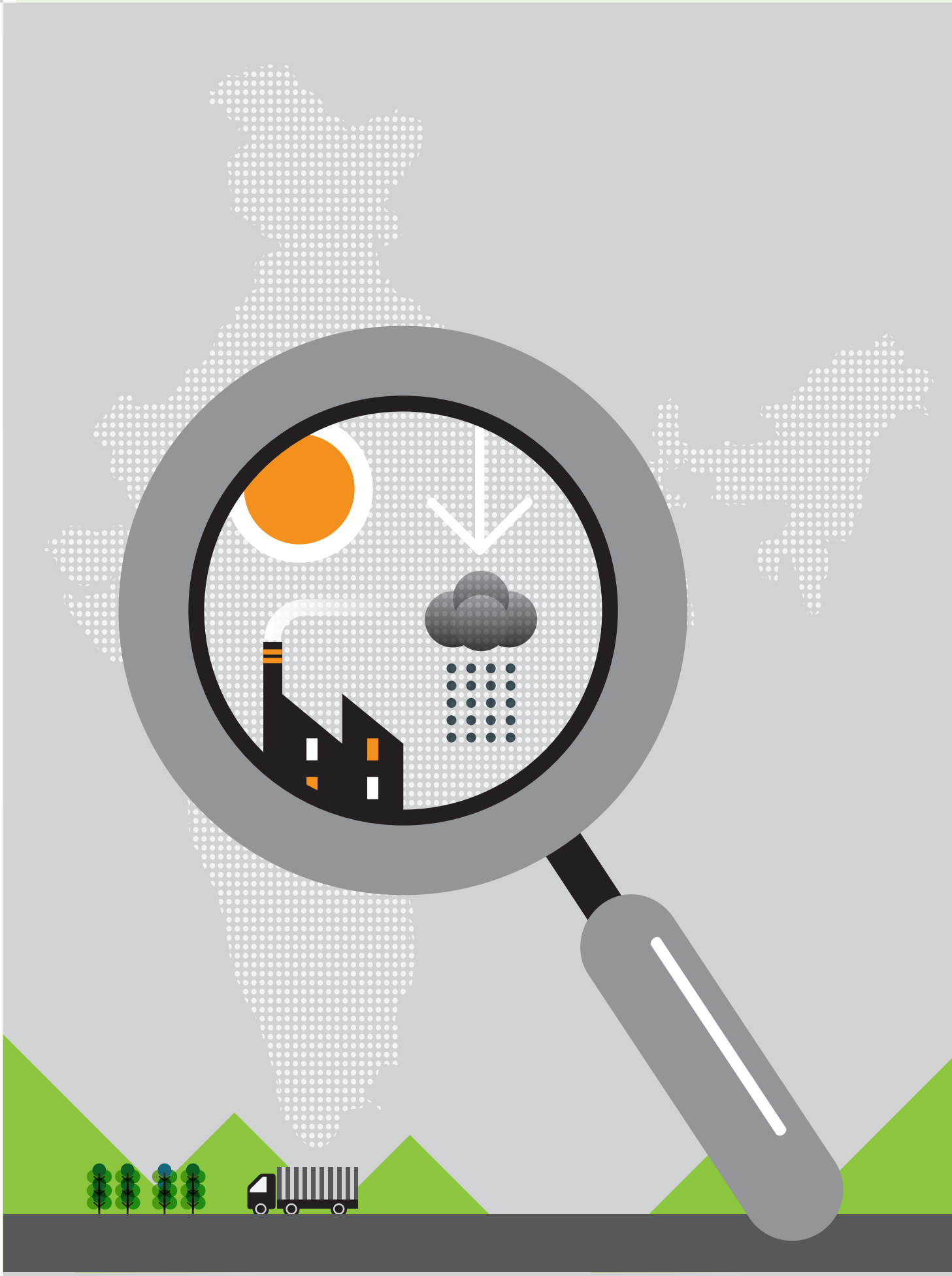
Methodological hints in Chapter 6.3.2 of this manual

This is only an example of an agenda for your training programme. Update the agenda according to your final training outline. For tailoring the outline to the needs and expectations of your participants, have a look at the hints in Box 1.

- Present the agenda.
- Based on the round of introduction point out which of the mentioned expectations you will be able to meet in this training programme and which will not be met.

If you feel able to do so, offer your assistance in fulfilling those expectations that will not be dealt with during the training.





2 Building awareness of SMEs on climate change and its impacts on business

2.1 Overview of the module

Key Topic	As awareness among Indian SMEs on climate change and its impacts on business is still low, the first module of the training is dedicated to exactly this purpose.
Objectives	Raise awareness of participants on climate change in terms of • General insight into the nature and dynamics of climate change • Knowledge of past and future impacts of climate change in India • Impacts of climate change on business, specifically Indian SMEs After completion of the module, participants • Are able to describe the dynamics of climate change and their difference to weather dynamics • Are able to communicate impacts that can be expected and are already occurring and how they are relevant to businesses
Duration	80 min
Methods	Presentation, moderated discussion
Hand-outs	Worksheet "Assessment grid"
Equipment	Projector, notebook, flipchart, felt pens

Session Schedule

Time	Topics of the module	Key material
15 min	**Introduction to the dynamics of climate change** • Scientific background of climate change • Climate change dynamics and impacts on weather, eco-systems, people and business	• Ppt slides 4-10

Session Schedule		
Time	**Topics of the module**	**Key material**
30 min	**Understanding past and projected impacts in India** • Trends in temperature, rainfall patterns, sea level and extreme weather events in India • Impacts of these trends on business • Discussion on the participants' experiences with climate change impacts on SMEs	• Ppt slides 11-23
35 min (incl. case study)	**Understanding impacts on Indian SMEs** • Types of climate change impacts (direct, indirect) and impact areas of a business • Case study on climate change impacts (optional, but highly recommended) • Introduction to the "Assessment grid"	• Ppt slides 24-28 • Worksheet "Assessment grid", see Consultant's Manual Chapter 2.1

2.2 Trainer's reading

Objective and relevance of the module

The first module of the training is designed to raise awareness of Indian SMEs on climate change and its impacts on businesses. Even though many SMEs already have a basic understanding of what climate change means and that it has become an important issue on the national and international agenda, only a minority has realised that climate change is relevant to their company. The main focus of this minority has so far been on climate change mitigation. In fact, by now there are a number of front-runners – individual SMEs and SME clusters – who eagerly work on assessing and reducing their GHG emissions. Looking at how the impacts of climate change affect the business sector has, however, so far been a blind spot among most Indian SMEs.

This would not be a problem if only minor impacts of climate change on Indian companies were expected. Unfortunately, the opposite holds true: due to its geographic characteristics and its socio-economic conditions, India is considered one of the most vulnerable countries to climate change worldwide. Rising temperatures, changes in rainfall patterns, rising sea levels and more frequent and more intense extreme weather events such as floods, droughts or cyclones can already be observed in different areas of India, and are projected to intensify in the future.

The particular vulnerability of India applies to many parts of the infrastructure and population, and also for its SMEs. For instance, many Indian SMEs rely on old machinery, have limited awareness and skills on issues such as resource efficiency, and are located in areas with insufficient infrastructure. Often they lack the resources to assess, monitor, and adapt to climate change related risks. As the capacity to deal with financial losses or business disruptions is relatively low, climate change impacts can even put SMEs out of business.

The impacts of climate change are already felt by SMEs today, for instance during the frequent energy and water shortages in summer months. SMEs are, however, not yet connecting these impacts to climate change, neither are they developing response strategies for adapting to projected impacts. A lack of awareness about the impacts of climate change on their business is the primary obstacle for a more extensive engagement of Indian SMEs in CCA.

Topics of this module, why they are chosen and how they are addressed

For raising awareness on the impacts of climate change on Indian SMEs the module starts out by putting the spot light on a **case study of an Indian SME** in the textile manufacturing sector, showcasing problems the case company faced in 2012 which can be connected to climate change. Through this immediate connection of climate change impacts to the SME context the relevance for SMEs is proven right in the first minutes of the training, allowing to catch the full attention of participants for the more theoretical contents which follow. The following slides then provide a **general introduction to the scientific background, dynamics and key impacts of climate change** on weather, ecosystem, people, and finally business, once more underlining the relevance of the issue for Indian SMEs.

Based on this general introduction, participants are then taken through the details of **climate change dynamics and impacts in India**. Information is provided on trends in temperature, rainfall patterns, sea level and extreme weather events in India. Through examples from company cases and sharing of experiences among participants, the impacts of these dynamics on SMEs are pointed out. In this way participants are able to develop a comprehensive picture on climate change challenges and their relevance for their company.

Figure 6 Impact areas of climate change for Indian SMEs

Source: adelphi

The final topic of this module takes the first step in introducing participants to the CCA methodology and tools, namely for **assessing climate change impacts**. Participants learn about the distinction between direct and indirect impacts and about the seven impact areas which can be distinguished for assessing climate change impacts on a company (see Figure 6). Potential impacts in these impact areas are exemplified through the case study of "IndTex" and through the participants' own examples. Based hereupon, the "Assessment grid" is presented to participants, providing them with a simple but comprehensive tool to assess their company's sensitivity and adaptive capacity to the impacts of climate change.

Key points to consider for effectively training SMEs on these issues

Climate change can appear to SMEs as quite a theoretical issue – and a global phenomenon materialising mostly in the future, with only minor relevance for the everyday running of a business. This is why in this awareness raising module it is particularly important to connect the presentation of climate change dynamics and data immediately with their relevance to business. Many examples of impacts on SMEs are given in the slides and trainer's instructions, but feel free to add examples and encourage participants to share their experiences with climate change impacts whenever it seems appropriate to you.

Depending on your group of participants, it might be recommended not to go too much into the scientific details of climate change dynamics and data, as this can overburden the group. When explaining scientific topics such as the greenhouse effect and the interrelations between gradual climate change (e.g., rise in average temperatures) and the growing frequency and intensity of extreme weather events (e.g., hurricanes), give participants sufficient time to ask questions. Adding pictures to the presentation which illustrate climate change dynamics and impacts your participants might have experienced (e.g., pictures from flooded factories during a recent major flood in their region) further help in raising awareness on the relevance of climate change impacts for businesses.

Finally, in this module it is important that you keep the discussion focussed on climate change impacts and adaptation, rather than on mitigation. As Indian SMEs are more familiar with mitigation issues (e.g., energy efficiency to reduce GHG emissions), participants might find it difficult to switch focus to adaptation when talking about climate change. One key objective for you in this module should be to help participants in shifting their perspective from looking at the impacts of their companies on the climate to looking at the impacts of the changing climate on their companies.

2.3 Slides for the presentation

2.3.1 Introduction to the dynamics of climate change

"IndTex 2012" – negative growth, putting its survival in question

- Apparel manufacturer for European and Canadian retailers
- Located in Faridabad cluster
- 200 employees, 7000.000 garments per month

In 2012, IndTex experienced:

- The partial collapse of one of the storage sheds
- A full summer reliant on diesel generator, leading to high production costs
- 5 days of shut-down due to lack of water; water truck was overbooked
- A double order of material; fabric from a reliable supplier was of low quality
- An increase in sick-days and days of extremely low productivity of its workers
- Ruined produce because of storage shed collapse
- Light shirt production needed to be declined for lack of adequate machinery
- The denial of extension of its line of credit from a local bank
- Loss of two key Western buyers

All problems can be linked to one global phenomenon: climate change!

giz

Ask participants: Do these impacts sound familiar to you and your company? Which similar problems do you remember from 2012 which could be connected to climate change?

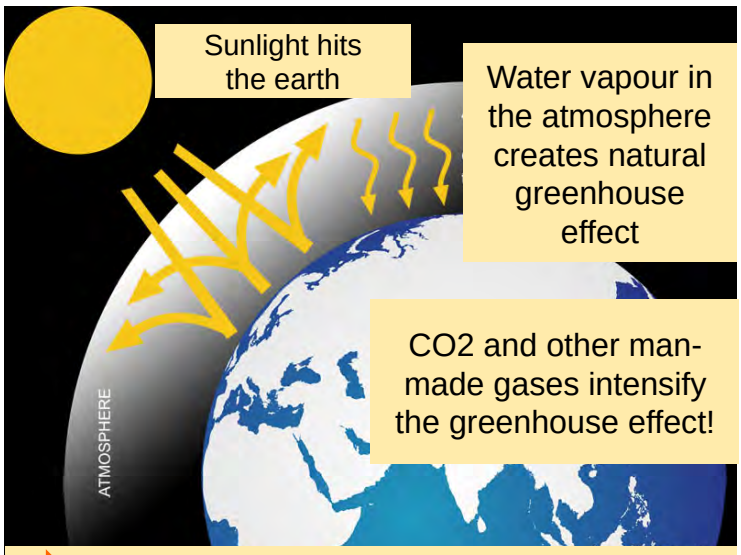
- Briefly introduce the case company IndTex (see references) and point out which impacts of climate change the company experienced in 2012.
- Underline that all these problems are linked to the global phenomenon of climate change.

The case study used in this training programme (see Chapter 5) is a hypothetical company whose description is grounded in real-life experiences. It is based on several company assessments as well as group discussions with representatives of textile companies in the Faridabad area. It portrays the impacts that a company experiences in times of heat waves and showcases potential adaptation measures.

Climate change can appear as quite a theoretical issue – and a global phenomenon materialising mostly in the future, with only minor relevance for the everyday running of a business. Starting with this company example helps demonstrate the relevance of the issue for business here and now – and thus to catch the attention of participants right from the outset.

For a detailed description of the company see Chapter 5 in this manual and the case study description in the training toolkit.

The Climate is changing because of man-made emissions



Man-made "greenhouse gases":
Carbon Monoxide
Methane
Nitrous oxide
Tetrafluoromethane
Hexafluoroethane
Sulfur hexafluoride
HFC-23
HFC-134a
HFC-152a

Source: US department of Energy Efficiency and Renewable Energy

giz

Name some examples of human activities that cause GHG emissions. With the help of Box 2 make sure that the examples fit your participants.

- Present the scientific background of climate change/global warming.
- Key idea: Human activities which change the composition of the atmosphere are the main cause of global warming.

The earth's atmosphere acts like a greenhouse – by trapping the incoming heat inside. A naturally occurring greenhouse gas is water vapour and it is the largest contributor to the natural greenhouse effect. This effect is the prerequisite to life on the planet.

In addition to this natural shielding effect, man-made gases in the atmosphere increase this greenhouse effect, further preventing the heat from escaping. Although they occur in much smaller quantities than natural gases, they play a substantial and growing role in the greenhouse effect. These include carbon dioxide, methane, and nitrous oxide.

These greenhouse gases absorb heat and radiate some of it back to the earth's surface, causing surface temperatures to be higher than they would be otherwise. The gases result from burning fossil fuels, including coal and oil. But the destruction of so-called carbon-sinks, such as rainforests, contributes to a higher concentration of greenhouse gases in the atmosphere as well.

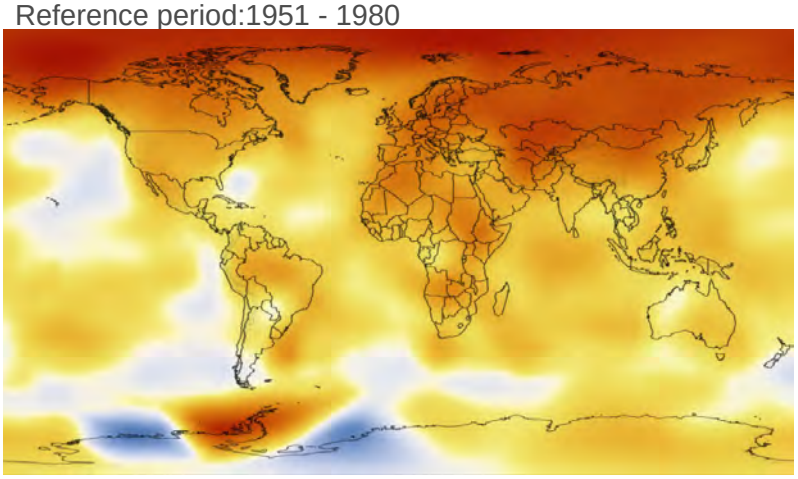
The intensified (non-natural) greenhouse effect is the most important trigger for climate change. Make sure that all participants have understood the greenhouse effect and the difference between the natural greenhouse effect and its intensification through human activities, leading to accelerated global warming.

"Canada's Action on Climate Change", explaining the greenhouse effect:
http://www.climatechange.gc.ca/default.asp?lang=En&n=1A0305D5-1

Past temperature changes 2000 – 2009

Reference period:1951 - 1980

Source: NASA



In many areas of the world, temperature has increased considerably in the last decade

Important to focus on long-term trends, not yearly variations!
T**emperature increase is undeniable**!

giz

To involve the participants into the discussion, you can ask them whether they have already felt that temperatures are rising. Ask them to share impacts which they have experienced personally, in the business context or observed in India more generally.

- Present a key fact showing that climate change is already happening today: rising temperatures in most parts of the world.
- Make clear that rising temperatures must be looked at as a general long-term trend; average temperatures in individual years continue to vary, and there can still be unusually cold years as well.

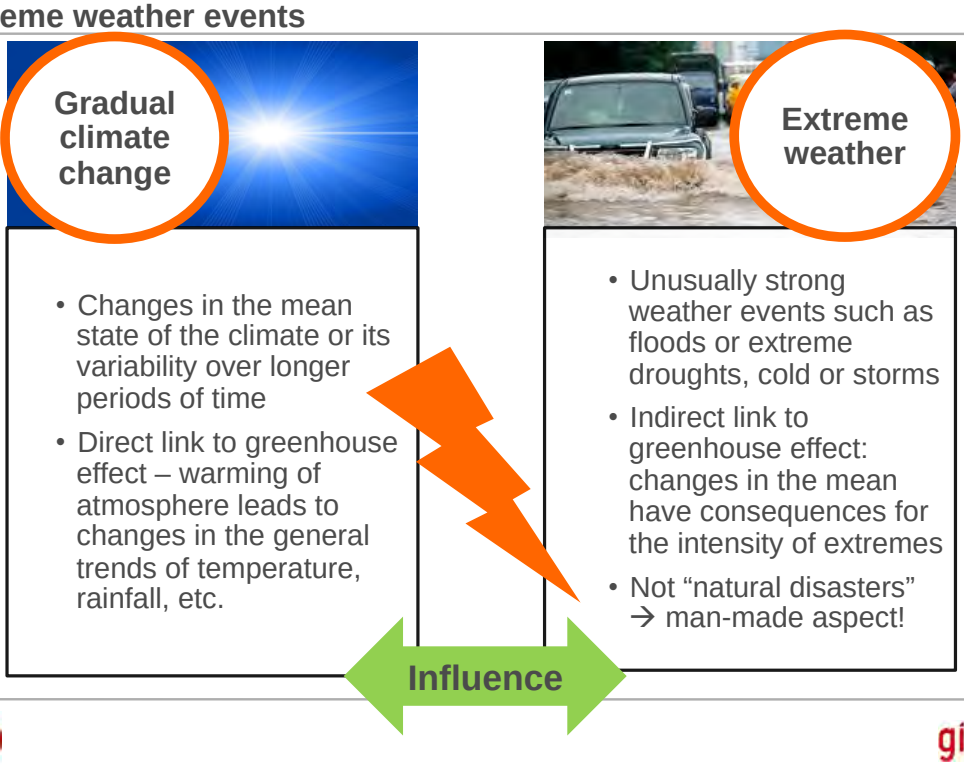
Studies have been undertaken by different research institutes on how global temperatures might develop in the next years. Because of the broad time scales and difficulties in modelling systems, the results vary widely. However, almost all studies mention that temperatures will rise within this century (IPCC 2007).

Make sure that you explain the legend so that everybody can follow your explanations.

Video by the BBC on climate change all over the world:
http://www.climate-expert.in/introduction-to-climate-change/at-a-glance-major-impacts-for-india

International Panel of Climate Change (IPCC) 2007: Fourth Assessment Report,
http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#.Uab-XezWVbE.

The two faces of climate change: gradual climate change and extreme weather events



→ Find out before the training about past extreme weather events in regions that are relevant to participants. For reasons of comparability, it might be useful to also look for latest global events.

There are two "faces" of climate change: gradual changes in trends (of temperatures, rainfall, humidity levels, sea levels etc.) over extended time periods and increases in extreme weather events. Gradual changes can be directly linked to the greenhouse effect. Extreme weather events are influenced by these gradual changes and are thus indirectly linked to human GHG emissions. A reverse influence can also be observed: extreme weather events can influence the general long-term trend in the climate.

Extreme weather events include floods and droughts, cyclones, hurricanes and tornados, heat waves, thunderstorms, hailstorms and dust storms, fog or cold waves.

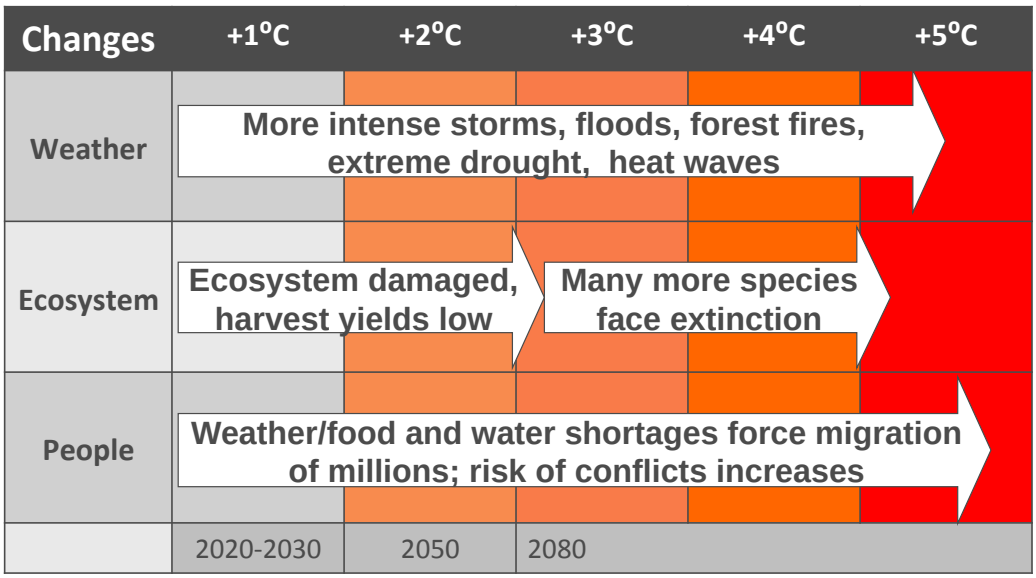
There is a widespread understanding in climate science that recent increases in extreme weather events all over the world are linked to higher average temperatures.

You can insert pictures of recent climate change impacts/events into the presentation to give further impressions of the different "faces" of climate change.

Study by Hansen, Sato and Ruedy (2012) on "Perception of climate change", *http://www.pnas.org/content/early/2012/07/30/1205276109.full.pdf+html*

Article by the New York Times on extreme weather events: *http://www.nytimes.com/2013/01/11/science/earth/extreme-weather-grows-in-frequency-and-intensity-around-world.html?pagewanted=all&_r=0*

Changes in climate affect weather, ecosystem and people



Source: IPCC Scenario A1B

Climate change leads to changes in weather patterns, ecosystems and socio-economic conditions. The more the temperature rises, the stronger the effects are on weather, ecosystems and people.

Warmer temperatures are causing changes in the weather and hydrological cycle at regional and global scales. These changes affect the intensity of droughts and floods and the availability of water.

Such changes in turn present challenges for many aspects of human society and industry (e.g., agriculture, rural economies, insurance, water security and food security). Many of our managed ecosystems (particularly agriculture and forestry) and biodiversity are affected; sea level rise will have an increasing impact on human settlements and infrastructure. These challenges lead to increased migration and conflicts.

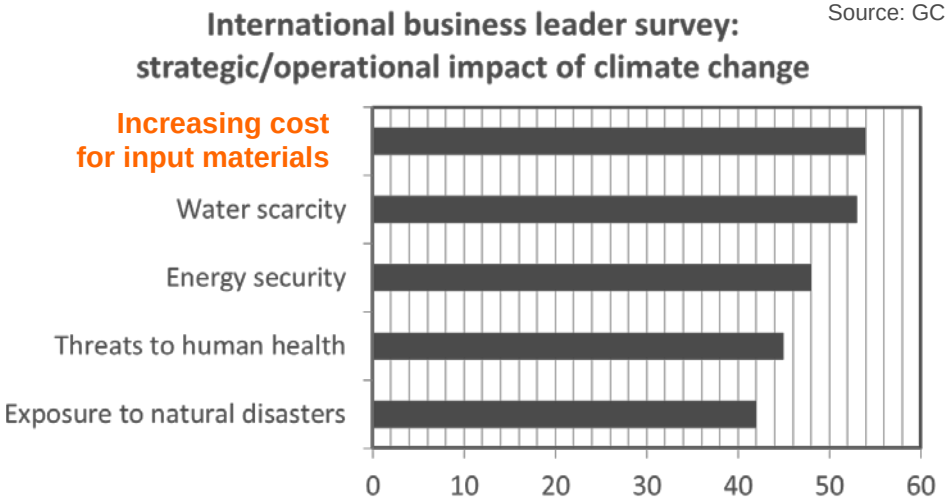
Take this slide as an opportunity to explain that different scenarios have been developed by international organisations and the scientific community on the future effects of climate change. The scenario used in this slide – scenario A1B of the Fourth Assessment Report (AR4) of 2007 by the International Panel on Climate Change (IPCC) – assumes very rapid economic growth, and a balance of energy sources (not extremely fossil reliant, not extremely renewables reliant).

Study on "Water Scarcity as Growing Risk for Businesses & Investors":

http://www.climate-expert.in/attachments/article/13/2009%20CERES%20-%20Water%20Scarcity%20-%20growing%20risk%20for%20business.pdf

Businesses expect impacts of climate change to matter greatly

Source: GC 2010



Other risks mentioned include transportation risks, deterioration of water quality, decreased agricultural productivity, risk of flood, drought, impacts on coastal resources, food security, threats to ecosystem and biodiversity

giz

This slide offers another good opportunity to ask participants: "Have you already felt these types of impacts on your company?"

(Alternatively, you can have this discussion at the end of this topic, guided by the slide on page 49)

This is the first time in the training programme that climate change is directly linked to businesses. When naming further examples of negative impacts, try to use examples which are relevant to the sectors and particular business operations the participating companies are active in. Box 1 and Box 2 will help you with this!

Companies all over the world expect impacts of climate change to matter greatly for their business.

The data stems from a survey by the Global Compact and Accenture (2010) of 766 CEOs around the globe. This study shows that large corporations including multi-national enterprises expect that impacts of climate change on business strategy and operations will matter greatly in the future.

Study of the UN Global Compact and Accenture of 2010 "A New Era of Sustainability": *http://www.unglobalcompact.org/docs/news_events/8.1/UNGC_Accenture_CEO_Study_2010.pdf*

2.3.2 Understanding past and projected impacts in India

Past and future changes in India: Temperature

Past

- Temperature increased 0.56 - 0.68 °C during last 100 years
- Most warming occurred in post-monsoon / winter seasons
- Increase in hot days / heat waves, decrease of cold days

Future

- Temperature to increase up to 3 - 4 °C (mid 21st century)
- Warming is widespread - substantial spatial differences
- Increase in frequency of heat waves
- Higher frequency and intensity of droughts

Impacts

- Lower quality of soil, more difficult harvests, lower yields
- Water availability lower
- Infrastructure suffers / transport problems
- …

→ Ask the participants what other impacts they have experienced from rising temperatures on their companies.

Can they also see opportunities for businesses in these changes?

→ If you have time, you can show the video on "Climate change in rural India" (see reference below).

India has already experienced an increase in temperature. The increase will be even stronger in the future. Temperature increase will have numerous negative impacts on SMEs.

Sources of this slide include the IPCC report and Indian reports on climate change; for references see the following slides in this section.

The following two slides further illustrate the point made on this slide.

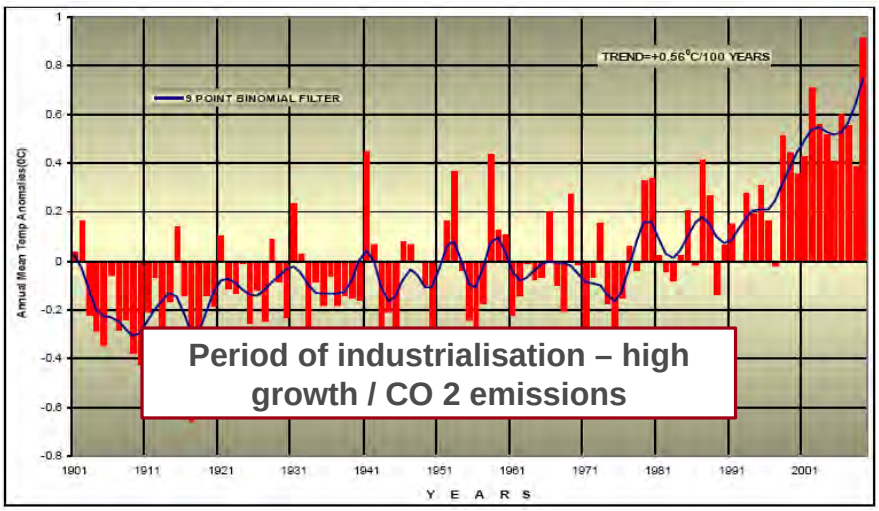
While in the previous section you have given an overview of the most probable aspects of climate change on a global level, you can use this and the following slides to explain past and projected impacts specifically for India.

This slide is a summary of temperature changes in India. Therefore, point out that the temperature has already changed and will keep on doing so in the future, but keep details for the next two slides.

Video on "Climate change in rural India":
http://www.youtube.com/watch?v=OqLcxYvZ6ks&list=PL536A6FFBA809B9A9&index=1&feature=plpp_video

Temperature has risen visibly in India

Annual mean temperature anomaly for India – observed after long period of CO2 emissions growth in India and Western world



Source: India Meteorological Department

India has already experienced an increase in temperature. The Indian Meteorological Department indicates a temperature increase of 0.56 °C in the last 100 years. The chart makes clearly visible that the rise in temperature speeded up strongly in the last quarter of the 20th century – after decades of industrial growth.

Another study (Kothawale and Rupa Kumar, 2005) shows that there has been an increase of the annual mean temperature in India of 0.22 °C per decade between 1971 and 2001.

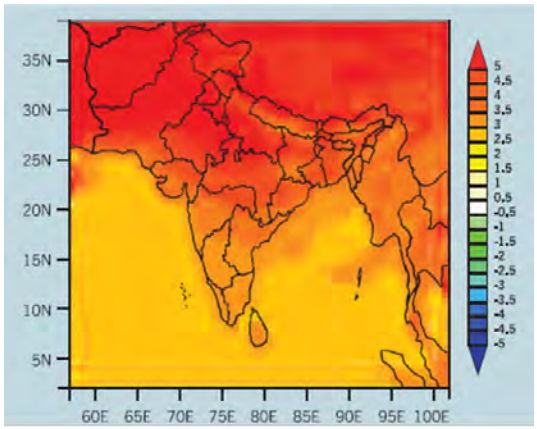
The main point is clear: an increase is shown in every available study; variations within this general trend can be attributable to the number of stations and years used.

Make sure that participants understand that this trend cannot be completely stopped anymore, after decades of GHG emissions. But we can do our best to avoid that the degree and speed of climate change increases even further. It has been the industrialised countries in the West who were mainly responsible for past emissions of GHG; by now, however, emerging countries including Indian have become major emitters of GHG as well. To prevent a further worsening of the climate crisis, it is crucial that all countries work together to tackle the problem. Insights into the science and impacts of climate change have become known only recently; now it is time to act.

India Meteorological Department on "2009: The warmest year since 1901": *http://www.imd.gov.in/doc/warm2009.pdf*

Kothawale, D. R. and K. Rupa Kumar (2005): On the recent changes in surface temperature trends over India, Geophysical Research Letters, Volume 32, Issue 18, accessible after registration for example from *http://onlinelibrary.wiley.com/doi/10.1029/2005GL023528/abstract*

In the future, even more severe temperature rise projected



Some regions might experience **a 5 ºC rise** in temperature!

Annual mean surface air temperature increase (ºC, right) for the period 2071-2100 with reference to the baseline of 1961-1990, under the A2 scenario

Source: Climate change scenarios for India, Keysheet 2, IITM, MOEF

giz

→ The level of detail regarding the sources of this trend depends on your participants; be careful not to overload them with information. This first session is really only designed to assure a basic understanding of the dynamics behind climate change and its projected impacts.

In the future, even more severe temperature rises (of up to 5°C in certain regions) are expected.

The future warming trend is influenced by the amount of GHG emissions into the atmosphere. However, it is yet unclear to what extent international efforts will be able to curb emissions. Therefore, all projections are done by way of scenario planning.

Models for temperature increase in the world:

IPCC (2007): In its most recent Assessment Report the IPCC has projected the increase of global temperatures according to four scenarios: A1, B1, A2 and B2. These scenarios are defined by globalisation/regionalisation and economic growth/environmental protection.

- A1 considers very rapid economic and population growth and therefore projects the highest possible temperature increases
- A2 (as shown in the slide) assumes a regionalised world with high population growth, slow economic development and slow technological change → leads to high emissions and high temperature increase of 2.0–5.4 °C!
- B1 and B2 project lower temperature increases because they assume that the world will put an emphasis on climate protection.

Models for temperature increase in India:

- IITM et al. 2007: projects an average temperature increase for India of 4°C by 2100.
- Lonergan (1998): estimates an increase of temperature between 2.33 and 4.78 C°.
- Lal et al. (2001): estimate a temperature increase of 1.4 C° for 2020 and between 2.23 and 2.87 °C for 2050. Increase is projected to be higher in winter than in summer.
- Kumar et al. (2003): estimate an overall increase in minimum temperature of 4 C°, being more in the southern peninsula, northeast India and some parts of Punjab, Haryana and Bihar.

→ Models project an average temperature increase over India of around 0.5°C by the year 2030.

→ The maximum temperature increase (i.e., annual mean temperature change) is expected to occur over northern India, followed by the eastern peninsula.

→ By the year 2100, the temperature increase could be between 2-4°C, with a possible maximum increase in the northern region of 4°C.

To give an idea of what a temperature rise of only few degrees means for the planet's ecosystem and livelihoods, you can use a simple analogy: what happens if your body temperature rises by 1°C? What about 2°C? And how do you feel if you have a body temperature of 41°C, 4°C above the usual? We all know that with such a high fever we feel quite out of balance. Of course, body temperature and the plant's temperature patterns are two different things. Still, this analogy is a fun – and impressive – way to give an idea of what severe consequences these seemingly small changes in average temperatures have for the planet's ecosystem and livelihoods.

IPCC's "Scenarios for GHG emissions" as described in the Synthesis Report of the 4th Assessment Report (2007):
http://www.ipcc.ch/publications_and_data/ar4/syr/en/mains3.html

IITM, MoEF and DEFRA (2007): "Climate Change Scenarios for India":
http://randd.defra.gov.uk/Document.aspx?Document=GA01021_3560_FRP.pdf

Kumar, K et al. (2003). Future climate scenario. In: Climate change and Indian Vulnerability assessment and Adaptation. Universities Press (India) Pvt Ltd., Hyderabad, 69-127.

Lal, M. (2001). Global climate change-India's monsoon and its variability: vulnerability and adaptation issues" Report on Country Studies Vulnerability and Adaptation, Work Assignment 402 – Task 11 under Stratus Consulting Contract 68-W6-0055 (Washington D.C.: Environmental Protection Agency 2001).

Lonergan S. (1998) Climate warming and India. World Bank Technical Paper No 402, Washington DC.

Past and future changes in India: Rainfall

Past

- Rainfall of strong inter-annual / decadal variations
- Increase of monsoon rainfall along the western coast, North AP, NW India
- Decreasing monsoon rainfall in Madhya Pradesh, NE India, parts of Kerala

Future

- Increase of rainfall is expected in monsoon season
- Reduction or rainfall during the rest of the year
- Over the whole year, more rainfall is predicted for coastal regions

Impacts

- Difficulty to project seasons and rainfall yields
- Water availability lower / cost of water rises
- Energy problems resulting from low water in dams, use of water pumps (see blackout summer 2012)

giz

Ask the participants what other impacts they have experienced from changing rainfall patterns on their business.

Can they also see opportunities for businesses in these changes?

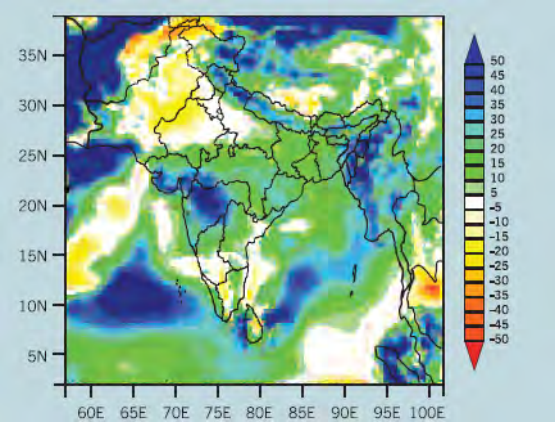
India has already experienced changes in rainfall patterns. The temporal and spatial variations will increase even further in the future. These changes in rainfall patterns are affecting SMEs in numerous ways.

Sources of this slide include the IPCC report and reports on climate change in India; for references see the last slide of this section.

The following two slides further illustrate the point made on this slide.

Again, just give a short summary here. More detailed information will be shown on the next two slides.

Expected changes in rainfall / 2100



Some regions might experience a decline of 25% of Monsoon rainfall, others a rise of 50%!

Spatial patterns of the changes in summer monsoon rainfall (mm, for the period 2071-2100 with reference to the baseline of 1961-1990, under the A2 scenario)

Source: Climate change scenarios for India, Keysheet 2, IITM, MOEF

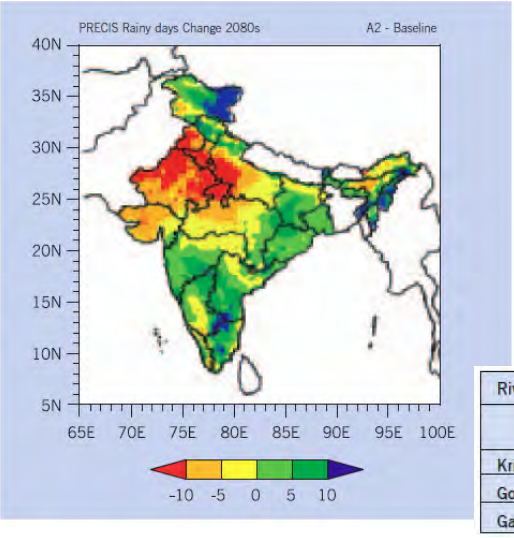
giz

One of the most dramatic changes in rainfall will be the increase/decrease of monsoon rainfalls.

By the end of the 21st century, summer monsoon rainfall is predicted to have both increased in some regions of India and decreased in other regions!

IITM, MoEF and DEFRA (2007): "Climate Change Scenarios for India": *http://randd.defra.gov.uk/Document.aspx?Document=GA01021_3560_FRP.pdf*

Changes in Annual Number of Rainy Days in India



River Basin	Baseline (1961-1990)		Future (2071-2100)	
	Annual Rainfall (cm)	Annual Flow (km^3)	Annual Rainfall (cm)	Annual Flow (km^3)
Krishna	91	60	112	67
Godavari	166	98	201	116
Ganga	134	482	150	543

Source: Climate change in India, INCCA 2 report, Nov 2010

Not just monsoon intensity but also the number of annual rainy days will increase/decrease over certain regions of India.

The three major river basins of India (Krishna, Godavari, Ganga) will be affected.

The number of rainy days will decrease in the western parts of the Ganga basin and increase over most parts of the Godavari and Krishna basins. In all three basins, however, extreme rainfalls and increased rainfall intensity per day are expected. Therefore, the overall surface water availability of those three river basins will show a general increase. The overall hydrological cycle of the river basins is predicted to be more intense, with higher annual average rainfall as well as increased drought.

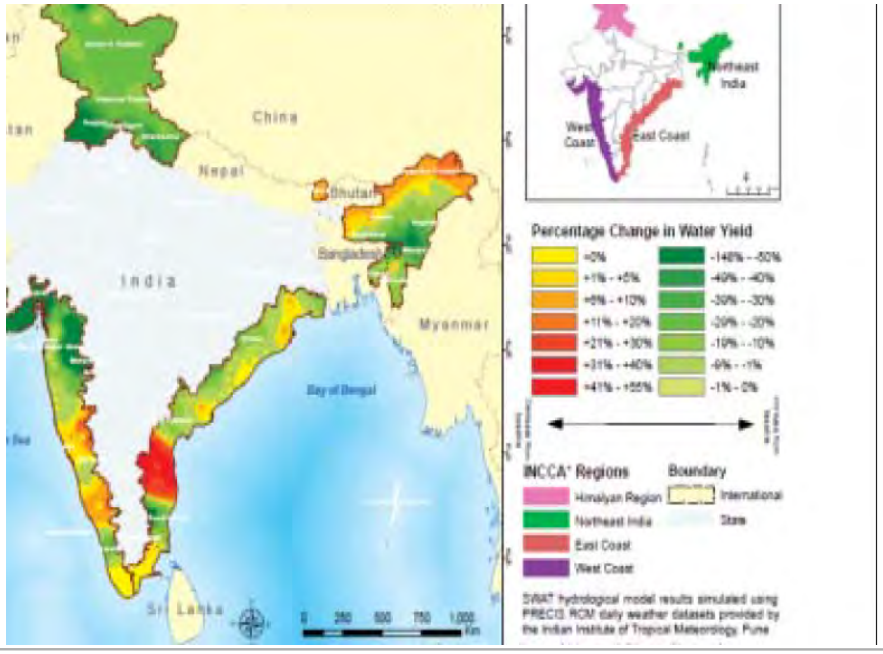
As "lifelines" of the country, the changes in annual flow will have significant impacts on agriculture, sanitation, drinking water availability and the water table. Future population projections need to be considered to project per capita water availability.

Make sure to relate these changes to the company context. Point out that while less water is always a problem, more water could actually have a favourable effect on some regions – and improving the availability of water for companies. However, too much water in an arid area leads to floods, also affecting company premises and transport routes.

INCCA Report on Climate Change in India:

http://moef.nic.in/downloads/public-information/fin-rpt-incca.pdf

Expected Changes in Water Yields 2030



Source: inca report : CC and India 4x4 assessment

giz

Due to changes in monsoon intensity and number of rainy days per year the water yield will increase in some regions of India and decrease in others.

Underline the importance of water yield for SMEs: lower water yield reduces the availability of water required in the production process; higher water yield can lead to the soil on company premises becoming marshy, possibly destabilizing buildings or road infrastructure.

INCCA Report on Climate Change in India:
http://moef.nic.in/downloads/public-information/fin-rpt-incca.pdf

Past and future changes: Sea level/temperature

Past

- Global mean sea level rise in 20th century: 10-22 cm
- Indian Ocean mean sea level rise:
  - 1993-2009: 1.63 cm +/- 0.25mm per year
  - of which 2004-2009: 6.59 cm +/- 0.49mm per year!
- Surface warming trend

Future

- Sea level rise of 15-38 cm by mid of 21st century , rise of 46-59 cm by 2100
- Greater number of high surges
- Continued rise in sea surface temperature

Impacts

- Danger for ecosystem / fishery / drinking water / food
- Danger of floods / soil erosion / damaging of infrastructure especially for coastal cities
- …

Ask the participants what other business impacts from sea level rise they have experienced or know of.

Can they also see opportunities for businesses in these changes?

In India, the sea level has already risen by about 12-22 cm over the 20th century. The speed of sea level rise has increased recently and will further increase in the future. These changes in sea level pose severe risks for SMEs located in coastal areas.

According to projections the mean sea-level is projected to rise by about 0.5 metres during the 21st century.

With its long coast line, India is especially vulnerable to a rising sea-level. More than five million people live in Low Elevation Coastal Zones. The most vulnerable stretches lie along the western coast of India. In addition, a significant amount of settlement areas are expected to be lost in the various river deltas on the east coast.

MoEF 2012: India. Second National Communication to the United Nations Framework Convention on Climate Change:
http://unfccc.int/resource/docs/natc/indnc2.pdf

GoI 2008: National Action Plan on Climate Change:
http://pmindia.gov.in/climate_change_english.pdf

NIO / MoEF / Defra 2007: Climate Change Impacts on Sea Level in India:
http://randd.defra.gov.uk/Document.aspx?Document=GA01021_3562_FRP.pdf

IPCC 2007: Fourth Assessment Report,
http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#.Uab-XezWVbE.

MOEF 2004: India's Initial National Communication to the United Nations Framework Convention on Climate Change:
http://unfccc.int/resource/docs/natc/indnc1.pdf

Past and future changes: Extreme weather events

Past

- So far, no extreme weather event can be linked **directly** to climate change
- But evidence is mounting that change in means also affects change in extremes; indirectly, severity of events like flooding in Pakistan 2011 and Sandy are likely to be influenced by climate change dynamics

Future

- Increased frequency of drought periods and floods projected
- Increased occurrence of cyclones in the Bay of Bengal, increased maximum wind speeds
- Even earthquakes can result from climate change (sea level rise in earthquake-prone areas, e.g., Gujarat

Impacts

- **High and uncalculable risks** result for infrastructure and people

Ask the participants what other business impacts they have experienced during extreme weather events.

Can they also see opportunities for businesses in these changes?

There is growing evidence that climate change has contributed to the increase in frequency and intensity of extreme weather events observed over the last decades. In the future, an increase of extreme weather events can be expected for India, with a range of negative impacts on SMEs.

During the last 100 years India has experienced all of the following extreme weather events: floods and droughts, tropical cyclones, heat waves, thunderstorms, hailstorms and dust storms, fog or cold waves.

Cold waves mainly affect the areas to the north of 20°N but in association with large amplitude troughs, cold wave conditions are sometimes reported from states such as Maharashtra and Karnataka as well.

While the southernmost part of the country is free from dust storms and hailstorms, such hazardous weather affects the central, north-eastern, north and north-western parts of the country.

Compared to earlier decades, in the decade of 1991-2000 a significant increase in the frequency, persistence and spatial coverage of heat waves/severe heat waves has been observed.

Emphasise the relevance for business: potentially very strong impacts on infrastructure, machinery, health of employees and the logistical chain!

Summary of extreme weather events in India over the last 100 years:
http://sa.indiaenvironmentportal.org.in/files/extreme%20events.pdf

Observed changes in New Delhi / NCR

Temperature trends

•Slight rise in mean temperature: 0,02°C per decade between 1900-2010

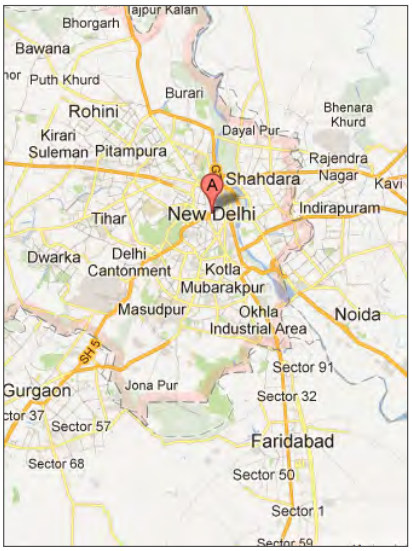
•Rising mean maximum temperatures between 1951-2000

Rainfall patterns

•Varying mean annual rainfall

- ➢ Increases between 1900 and 1990
- ➢ Decreasing trend since then until 2009

Extreme weather events - floods



Source: Google maps

If the majority of your participants come from a different region, you should change the area focus of both this slide and the next slide. Providing these local climate data will catch the participants' attention; also, it can be used in exercises applying the CCA methodology in Module 3.

Check Box 4 for assistance in gathering climate change data!

Changes in temperature trends and rainfall patterns as well as more severe flooding during monsoon seasons have already occurred in the Delhi/NCR area.

In December of 2006, Delhi had the lowest temperature since 1935 (0.2°C). The following summer in June 2007, Delhi had a maximum temperature of 44.9°C.

Use this slide to underline that in order to understand which climate change phenomena a company has to prepare for, it is not only important to consider general trends in India, but have a close look at the climate phenomena in the exact locations relevant to the company. This concerns a company's own plants, but also the locations of suppliers, the transport routes and its main markets.

Rosenzweig, Cynthia et al. (2009): Framework for City Climate Risk Assessment, Fifth Urban Research Symposium 2009.
http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1256566800920/6505269 -1268260567624/Rosenzweig.pdf

India Meteorological Department: Local weather report and forecast
http://www.imd.gov.in/section/climate/newdelhi1.htm and http://www.imd.gov.in/section/climate/palam20.htm

World Bank Group: Climate Change Knowledge Portal,
http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisRegion=Asia&ThisCCode=IND

Projected changes in New Delhi & Haryana

New Delhi (Baseline: 1971 – 2000)

Phenomenon	Baseline	Mid Century	End Century	Source
Mean temperature	25°C	+ 1,5 to +2,5°C	+2,5 to +4,5°C	Rose, 2009
Mean annual rainfall	760 mm	-15 to +35%	-15 to +35%	Rose, 2009

Haryana (Baseline: 1969 – 1990)

Mean min. temperature	16,3°C	+ 2,1°C	+ 4,7°C	Government of Haryana, 2011
Mean max. temperature	29,7°C	+1,3°C	+4,2°C	Government of Haryana, 2011

Temperature rises, rainfall projection is difficult and may vary; extreme weather events likely in the region: floods, droughts, and extremely cold periods

giz

Temperature rises and an increase in extreme weather events are among the projected changes for Delhi-NCR. Only unclear predictions exist on changes in rainfall patterns.

It can be difficult to find climate change projections for specific locations. One way to deal with this problem is to consult different sources which provide climate data related to the location, as done for this slide.

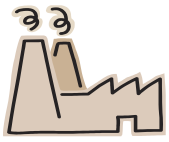
Rosenzweig, Cynthia et al. (2009): Framework for City Climate Risk Assessment, Fifth Urban Research Symposium 2009.
http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1256566800920/6505269-1268260567624/Rosenzweig.pdf

Government of Haryana, 2011: Haryana State Action Plan on Climate Change, Draft Final Report:
http://re.indiaenvironmentportal.org.in/files/file/Draft%20Final%20Report_GIZ_INRM_State%20Action%20Plan%20on%20Climate%20Change%20Haryana_April25_2012.pdf

Discussion

How does climate change affect your business?

SMEs



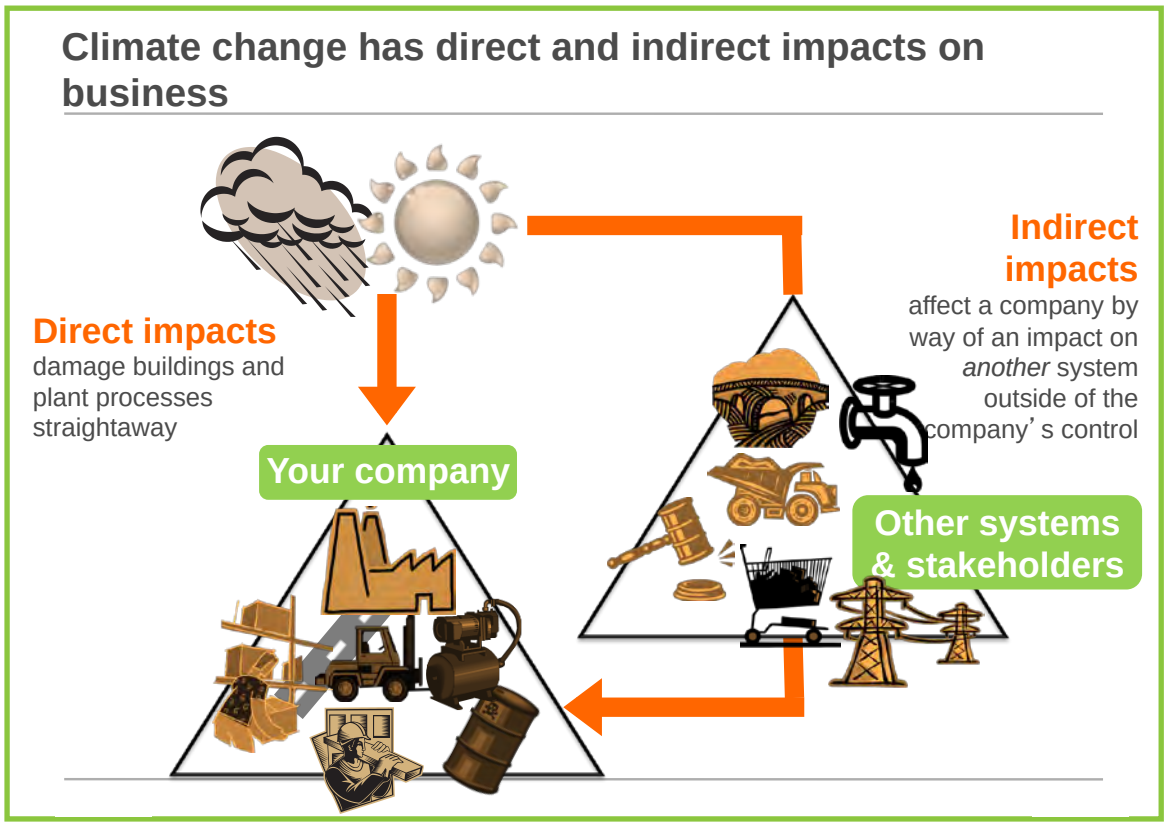
- Discuss with participants which past impacts of climate change they have observed (temperature, rainfall, sea level, extreme weather events) and how their companies are affected today and in the future.
- Collect results on a flipchart. Guide participants in reflecting on impact areas other than company location and processes, e.g., their suppliers, logistical chain or governmental regulation.
- Close by stating that these impacts can in fact be grouped into different impact areas – which will be introduced in the next session.

Conduct this discussion here only if you have presented the slides on climate change data in one go, while reserving the discussion on the participants' experiences for the end of the session. If you have already discussed the participants' experiences extensively before, you can skip this discussion.

Keep the discussion focussed on climate change impacts. It can easily happen that participants mostly speak about mitigation and energy efficiency issues when the topic of climate change is raised, as mitigation topics are more familiar to them.

Flipchart, felt pens

2.3.3 Understanding impacts of climate change on Indian SMEs



Climate change can have both direct and indirect impacts on a business. Both have to be taken into account when assessing the company's vulnerability.

Direct impacts of a climate phenomenon affect the company without any intermediary. For example, machinery and raw materials may be damaged and workers may be less productive during heat waves.

Indirect impacts affect a company by way of an impact on another system outside of the company's control, for example changes in supply and demand, logistics, regulations, impacts on wider stakeholders, such as the surrounding community, and financing. Processes and buildings may also be affected by indirect impacts. For example, if the sewage system of a company overflows because a flood affects surrounding plants, but not its own premises, this would be an indirect impact.

More examples of direct and indirect impacts are given in the next slide.

Direct impacts are easier to anticipate than indirect impacts, as indirect impacts depend on changes of systems and stakeholder behaviour outside the direct control of the company. To some people it might come as a surprise that indirect impacts can matter more for a company. For instance, while a company's own site may not be greatly affected by climate change, one or all important stakeholders such as customers, suppliers or local/national governments might be.

KPMG's review of business risks and economic impacts at sector level:
http://www.kpmg.com/EU/en/Documents/Climate_Changes_Your_Business.pdf

Examples of direct and indirect impacts on business

Direct impacts

damage buildings and plant processes straightaway

- Rooftops are damaged during heavy storms
- Raw materials in stock become spoiled by fungi after heavy rains
- Machinery overheats during periods of extreme heat
- Workers' health deteriorates during heat waves

Indirect impacts

affect a company by way of an impact on *another* system outside of the company's control

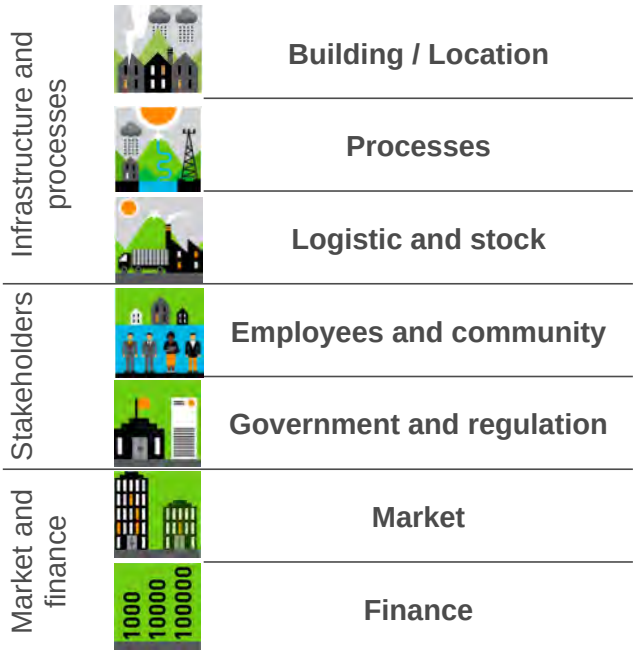
- Reduced availability of energy / water from the grid
- Delayed deliveries from suppliers whose premises had been flooded
- Stricter regulation concerning energy efficiency and water use
- Reduced demand for specific products due to changed weather conditions

giz

These examples apply to a broad range of companies and industry sectors. Still, review the examples closely and decide whether other examples better apply to the challenges your group of participants probably faces.

- Present the examples to the participants
- Ask participants to add further examples of both direct and indirect impacts

Businesses have seven impact areas of climate change



Ask the participants to name an example impact in each impact area. Give clarifications if the example given actually belongs to a different impact area.

We highly recommend you to use the case study of the textile company "IndTex" at this point to illustrate what are potential impacts in these seven areas on a company (see Chapter 5.3.2).

There are three broad impact areas as well as seven specific impact areas of climate change for a company.

Distinguishing between these seven impact areas allows a company to assess climate change impacts on the business in a comprehensive and structured manner.

- **Building/Location:** includes all physical assets of a company;
- **Processes:** includes provision/consumption of resources in the production process
- **Logistics and stock:** involves the provision with raw materials and other supplies, the storage of stock and the transport of supplied and manufactured goods
- **Employees and community:** covers the working conditions of employees as well as the relations with neighbouring communities
- **Government and regulation:** looks at upcoming regulations and government programmes developed in response to climate change impacts (e.g., insulation)
- **Market:** considers short-, medium- and long-term changes of the sales market.
- **Finance:** considers impacts on the financial situation, insurance needs and access to financing.

Climate impacts by sector by the "UK Climate Impacts Programme": *http://www.climate-expert.in/attachments/article/18/2005%20UKCIP%20-%20A%20Changing%20Climate%20for%20Business%20Planning%20for%20the%20Impacts%20of%20CC%20CCFB%20whole%20report.pdf*

Understanding impacts on the company – The assessment grid

Purpose Identify a company's specific sensitivity and current adaptive capacity to climate change impacts

Output Informational basis for assessing and prioritising risks for the company

	Impact on		Critical points	Assessment	In case of risk / opportunity: Extent of loss or damage / likelihood of occurrence	Ideas on measures
	 Building / Location	1	Are existing buildings resistant enough to withstand climate change impacts (changing climate, extreme weather events)?			
		2	How sensitive is the company location regarding climate change impacts?			
		3	Is infrastructure in direct proximity of the premises resilient regarding changing climate and extreme weather events?			
		4	How linked is the company with neighbouring companies? (resources, infrastructure, joint efforts)			
		5	How linked is the company with the community? (resources, infrastructure, joint efforts)			

giz

- Present the purpose, content and application of the worksheet to the participants. The table helps companies in collecting information on their current sensitivity and adaptive capacity to the impacts of climate change, roughly determining the level of risk entailed and developing first ideas on countermeasures.
- Let participants form groups of 4-6 people. Ask them to read through the sheet individually for 5 minutes and then discuss in the group the potential usefulness, but also potential problems of the worksheet.
- Invite working groups to share their thoughts, and answer their questions.

This worksheet is arguably the most important worksheet in the CCA toolkit for SMEs, as for many companies reflecting on climate change impacts on their company in such a structured manner and seeing the manifold impacts on paper can be an eye-opener – and the key for further engagement on the issue. Therefore, give participants sufficient time to study and discuss the worksheet, and to raise questions for clarification.

To demonstrate the application of the tool, in Module 3 a "Consulting Clinic" is foreseen where the trainer does a quick assessment with a volunteer from the group of participants (see Chapter 3.3.2).

If relevant for you, point out how you can assist companies in completing this assessment as part of a consulting or coaching project.

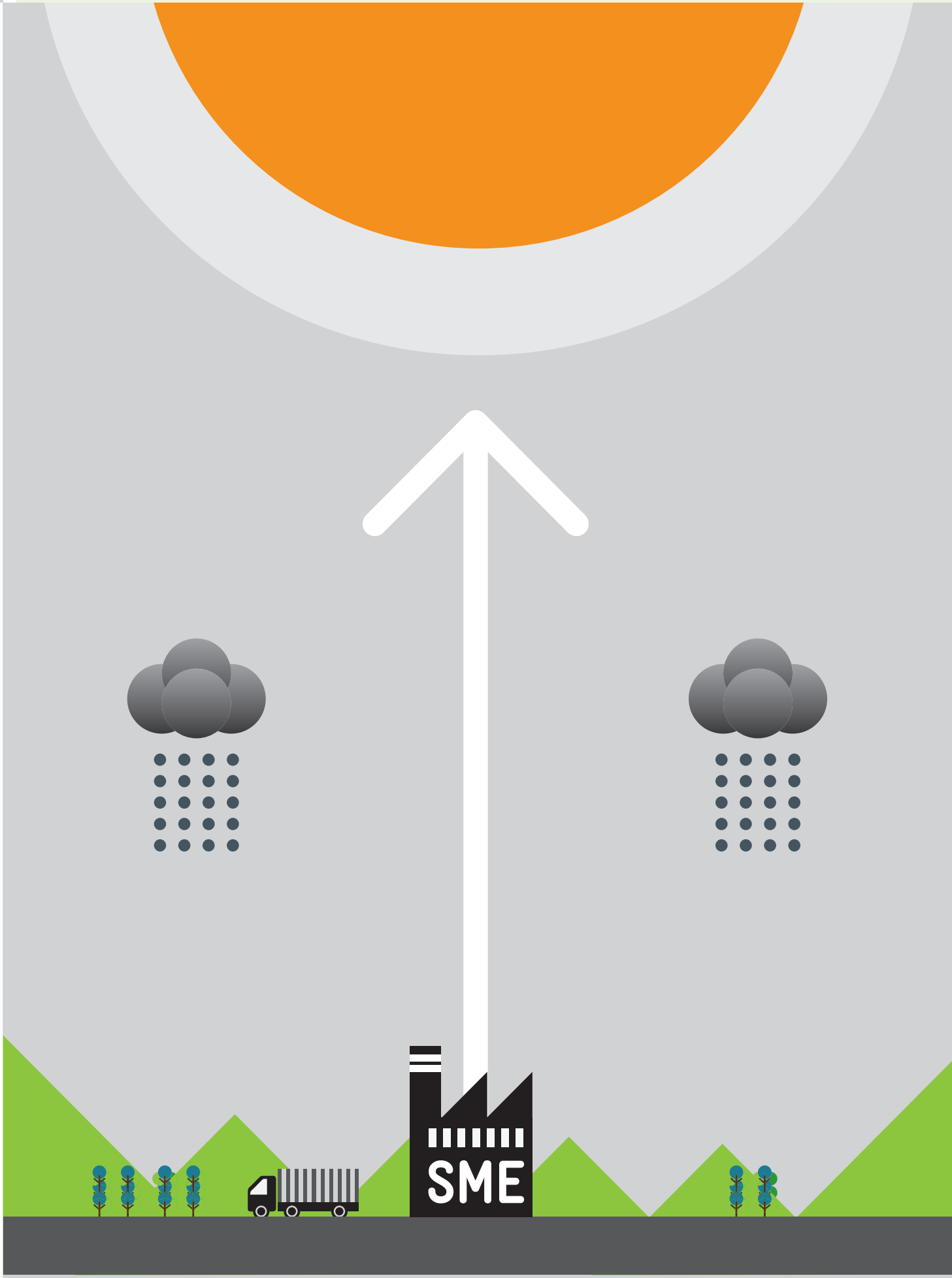
Worksheet "Assessment grid", see Excel file, spreadsheet "IIa – Assessment grid" and annex of the Consultant's Manual.

In Chapter 2.1 of the Consultant's Manual you can find further explanations on how to use the worksheet.

2.4 Handouts

2.4.1 Worksheet "Assessment grid"

See Excel file, spreadsheet "IIa – Assessment grid" and annex of the Consultant's Manual.
In Chapter 2.1 of the Consultant's Manual you can find further explanations on how to use the worksheet.


SME

3 Building practical skills of SMEs for developing adaptation strategies

3.1 Overview of the module

Key Topic	While Module 2 was aimed at raising awareness of SMEs on the relevance of climate change and its impacts on businesses, this module delivers the necessary knowledge, skills and tools for companies to proactively adapt to these impacts.
Objectives	• Introduce participants to key steps as well as practical tools for conducting a CCA risk and opportunity assessment for companies; • Build knowledge and skills of participants to use tools for identifying, assessing and planning adaptation measures addressing risks and opportunities; • Raise awareness on the benefits and hurdles of a strategic approach towards adaptation and enable participants to select the best suiting approach for their company. After completion of the module, participants • Are able to implement a climate change risk and opportunity assessment for their company; • Know how to identify, assess and prioritise adaptation measures for their company; • Understand different options for planning the implementation of those measures and are aware of key criteria to consider when deciding on the most appropriate approach for their company.
Duration	180 min
Methods	Presentation, moderated discussion, consulting session, group exercise
Hand-outs	• Assessment grid for consulting clinic • Worksheets – "Risk assessment" – "Risk matrix" – "New market opportunities" – "List of measures for addressing risks" – "List of measures for addressing new market opportunities" – "Strategy" – "Communication"
Methods	Projector, notebook, flipchart, felt pens, pin board, moderation cards (red, yellow, green)

Session Schedule		
Time	**Topics of the module**	**Key material**
25 min	**Mitigation and adaptation – why are they relevant for businesses?** • Presentation of the concepts of climate change mitigation and adaptation, their connections and differences. • Introduction to the key concepts and steps of a business approach to adaptation • Initial discussion on adaptation measures which companies have already undertaken	• Ppt slides 29-37
50 min	**Conducting a climate change risk assessment** • Introduction to the determinants of a company's vulnerability to climate change (exposure, sensitivity and adaptive capacity) • Presentation of the key steps and tools for implementing a climate change risk assessment for a company • "Consulting clinic": a short consulting process with one of the participants where the trainer identifies and assesses key risks and opportunities for the company resulting from the increasing frequency and intensity of flooding	• Ppt slides 38-43 • Worksheets "Risk assessment" and "Risk matrix", Consultant's Manual Chapter 5.2 • Hand-out "Assessment grid for the consulting clinic"
30 min	**Identifying opportunities of adaptation** • Introduction to different types of opportunities that adaptation to climate change impacts offer • Tools for identifying and assessing these opportunities • Discussion on competitive advantages and new market opportunities from adaptation for Indian SMEs	• Ppt slides 44-55
70 min	**Identifying, assessing and prioritising adaptation measures** • Distinction of three types of adaptation measures (grey, green and soft measures), three types of strategies (reactive, anticipatory and integrated adaptation) and four preferred options (no-regrets, low-, win-win and flexible options) • Key steps and tools for identifying, assessing and prioritising adaptation measures for a company, both for addressing risks and for identifying new business opportunities • Group exercise where companies form groups to develop adaptation measures to selected impacts of climate change.	• Ppt slides 56-68 • Worksheet "List of measures for addressing risks", see Consultant's Manual chapter 6.1 • Worksheets "New market opportunities", see Consultant's Manual Chapter 6.2
10 min	**Developing an adaptation strategy** • Options and key steps in planning for the implementation of adaptation measuresidentifying new business opportunities	• Ppt slides 69-72 • Worksheets "Strategy" and "Communication", see Consultant's Manual Chapter 7.1 and 7.2

3.2 Trainer's reading

Objective and relevance of the module

This module seeks to build the practical skills of participants to support the development of a CCA strategy for their companies. Even if SMEs are aware that the climate is changing and that this has a range of impacts on their company, they usually lack the skills and tools which allow them to respond to these impacts in a comprehensive, structured, effective and efficient way. Skill-building programmes and tools for CCA of organisations do exist, but only very few of these target the business sector, and prior to the Climate Expert no comprehensive toolkit was available which addressed the specific conditions and requirements for adaptation of Indian SMEs.

Indian SMEs need structured approaches and practical tools which support them in assessing climate change impacts on their company and developing adequate adaptation measures. Furthermore, enhancing SMEs' knowledge and skills in CCA will enable them to support the CCA of other stakeholders, for instance through joint projects with neighbouring communities, or by developing products and services for adaptation. The tools for risk and opportunity assessment, measure development and CCA strategy building promoted in this training programme and by the Climate Expert have been designed to fill this gap.

Topics of this module, why they were chosen and how they are addressed

The module introduces participants to the key steps of developing an adaptation strategy for their companies, and familiarises them with the tools to implement this process. As a basis for this, **key concepts of adaptation** are introduced in more detail: The difference between CCM as an inside-out approach (impacts of companies on the climate) and CCA as an outside-in approach (impacts of climate change on the company) is thoroughly explained to avoid misunderstanding; the main purpose of adaptation from a business perspective is then highlighted: adaptation at its core is about ensuring the survival and growth of the business. To convince participants of the feasibility and benefits of adaptation, a simple calculation of the costs of non-adaptation and the financial benefits of adaptation is provided: using an adaptation measure to the risk of flooding as an example, the case study company IndTex demonstrates that the return of investment in adaptation measures can be quick and high.

In the second module, the methodology and tools for conducting a **risk assessment** regarding climate change impacts is introduced and applied together with the participants. The first step in the risk assessment is to gather a clear understanding of a company's vulnerability to climate change, which is influenced by its exposure, sensitivity and adaptive capacity to climate change (see Chapter 3.3.2). This information can be collected with the help of the "Assessment grid" introduced in Module 2. The assessment of risks then helps in understanding which impacts should be addressed with priority through adaptation measures, and which are of less urgency. Participants are introduced to the key criteria for such an assessment, namely the probability with which the impact will occur and the extent of damage it will create; and to two worksheets which support the assessment: the "Risk assessment" table and the "Risk matrix". In a "consulting clinic" conducted by the trainer with a volunteer from the group, the participants observe how the tools for vulnerability and risk assessment are applied and can discuss benefits and potential hurdles.

Climate change not only creates risks, but also **opportunities** for companies, both in terms of competitive advantage and of new business opportunities. Measures which companies implement to address risks often also create a competitive advantage. For instance, introducing systems for reusing process water not only reduces the company's vulnerability to water shortages, but also the company's water bill. But measures can also be aimed at seizing market opportunities which emerge from the need of adapting to climate change impacts. These measures do not directly result from the company's risk assessment, but rather from a strategic look at expected market changes caused by climate change and adaptation needs.

Knowing about these various opportunities and seeing possibilities to realise them in practice is very important for achieving the participants' buy-in for promoting CCA. It also provides participants with "positive" arguments for convincing their superiors to develop a CCA strategy. The third module introduces five types of opportunities:

Competitive advantage	1. Cost reductions in operations
	2. Reputational gains among key stakeholders
	3. Development of skills growing in importance in the future
	4. Anticipation of regulation
Business opportunity	5. New market opportunities for products and services which facilitate adaptation

Participants learn at which steps of CCA strategy development these opportunities are identified and assessed. While competitive advantages are looked into when assessing adaptation measures for addressing risks in the following chapter, the tool "New market opportunities" for identifying and assessing emerging market opportunities is introduced here. The participants then discuss which advantages and opportunities of adaptation they see for their company/for Indian SMEs more generally and which strengths, but also hurdles exist for realising these opportunities.

Through the development of **adaptation measures** SMEs can reduce climate related risks and seize opportunities from CCA for their business. Adaptation measures for reducing risks build on the risk assessment conducted for the company; they can create competitive advantages for instance through cost savings or reputational gains. Additionally, companies can derive measures for their adaptation strategy by looking at new growth markets for adaptation products and services they could offer. The risk assessment and the discussion of market opportunities introduced in the preceding steps help companies understand in which areas adaptation measures are needed and beneficial. For planning adaptation measures, companies however need inspiration on how potential measures could look like for their business. They also need practical tools for determining which measures to undertake at what point in time. In the fourth topic of this module, participants are therefore introduced to different types of adaptation measures for addressing risks (grey, green and soft) and are invited to share measures from their own companies and work environment. Case examples from the food processing and chemical sectors as well as from the case company "IndTex" demonstrate the feasibility and benefits of such measures. Two tools are then introduced to participants for identifying, assessing and prioritising adaptation measures for their company: the "List of measures for addressing risks" and the worksheet "New market opportunities". In an exercise participants learn to apply the methodology and tools.

Finally, the key steps and tools for developing an **adaptation strategy** and a related communication strategy are introduced. As this is quite an advanced step for SMEs, the steps and tools are merely presented and discussed and their application is not worked on extensively in this training programme.

Important points to consider for effectively training SMEs on these issues

As this module contains a lot of technical elements – different typologies of risks, opportunities and measures, various assessment tools, criteria and methodologies – it is important that you find a balance between explaining these details on the one hand and showcasing the feasibility and benefit of adaptation on the other, to maintain attention and motivation.

Many SMEs might initially raise doubts that adaptation measures can actually be implemented by their companies, given their limited resources. Practical examples relevant to the participants' companies, strong involvement of participants in discussions and exchange of experiences, and a focus on opportunities can contribute to showcasing the feasibility of adaptation and strengthen participants' attention and motivation.

Make also sure to leave sufficient time for companies to familiarise themselves with the tools presented and to raise their questions. If they lose track of how the methodology and tools function and build on each other, it will be difficult for them to fully grasp the logic and topics of the programme, and discourage them from taking CCA forward in their organisations.

Allowing participants to experience the feasibility and benefits of adaptation and letting them feel "prepared" for putting this into practice will motivate them to transfer the gained knowledge to their respective companies. This is particularly important as your participants will probably not be the ones to take the final decision about the CCA engagement of their company, but rather need to convince their superiors of the practical feasibility and benefits of adaptation.

3.3 Slides for the presentation

3.3.1 Mitigation and adaptation – why are they relevant to businesses?

Mitigation: Carbon footprinting and energy efficiency

The company's impacts on the climate: Inside – Out

Mitigation strategy to avoid that climate change becomes unmanageable

- Examine emissions - "**carbon footprinting**"
- Change inefficient and harmful practices
- ➢ Reduce emissions (e.g., by **energy efficiency** measures)

Side Effect

In the long-term: mitigation reduces climate change dynamics and the need for adaptation!
BUT: Companies worldwide have been slow to act…

→ Ask participants to name mitigation measures they have undertaken in their companies.

Mitigation is "inside-out": the company's GHG emissions accelerate climate change; reducing these emissions thus reduces the effect of the company on the climate. Mitigation slows down climate change dynamics and the need for adaptation.

The UN defines CCM as all human interventions to reduce the sources of carbon emissions or enhance the "sinks". Sinks, most importantly rainforests, store and neutralize carbon. For businesses, mitigation refers to measures which reduce energy use and strengthen carbon sinks, for example

- Introducing more energy efficient machinery and equipment
- Installing solar panels to substitute conventional power sources
- Reducing air travel for business trips
- Planting trees

You can best introduce this theoretical concept by giving examples of mitigation measures in the business context (see above).

Do not spend too much time on this slide. The focus is on the difference between mitigation and adaptation; the concept of adaptation is introduced only in the next slide.

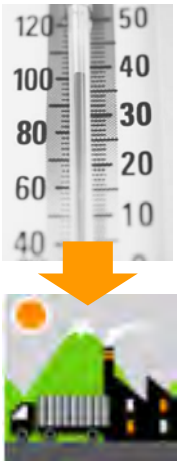
UNEP Homepage on Climate Change Mitigation:
http://www.unep.org/climatechange/mitigation/

Adaptation: Various activities in different impact areas

Climate change impacts on the company: Outside – In

Adaptation to **manage the unavoidable effects** of climate change

- Examine impacts on company (adaptation plan) and assess risks
- Define adaptation measures
- Monitor and evaluate implementation



Side Effect Adaptation measures in the field of energy efficiency can lead to **positive mitigation results**

A discussion is planned for the end of this chapter on the adaptation measures which the participating companies have already undertaken. If you feel that a participatory element is needed at this point already, you could have the discussion here.

Adaptation is "outside-in": Climate change has an impact on the company. Adaptation means that a company reduces its vulnerability to changes in the climate.

Adaptation measures can take many forms. A few examples include:

- Storm-proofing the rooftop of factory buildings to be less vulnerable to hurricanes
- Reducing the water use in production processes to be less vulnerable to drought
- Diversifying the supplier base and shortening transport routes to be less vulnerable to climate change risks in your logistics
- Briefing employees on health risks and behaviour during periods of extreme heat
- Monitoring regulatory changes concerning e.g., energy efficiency or water reuse
- Developing products which are especially heat resistant

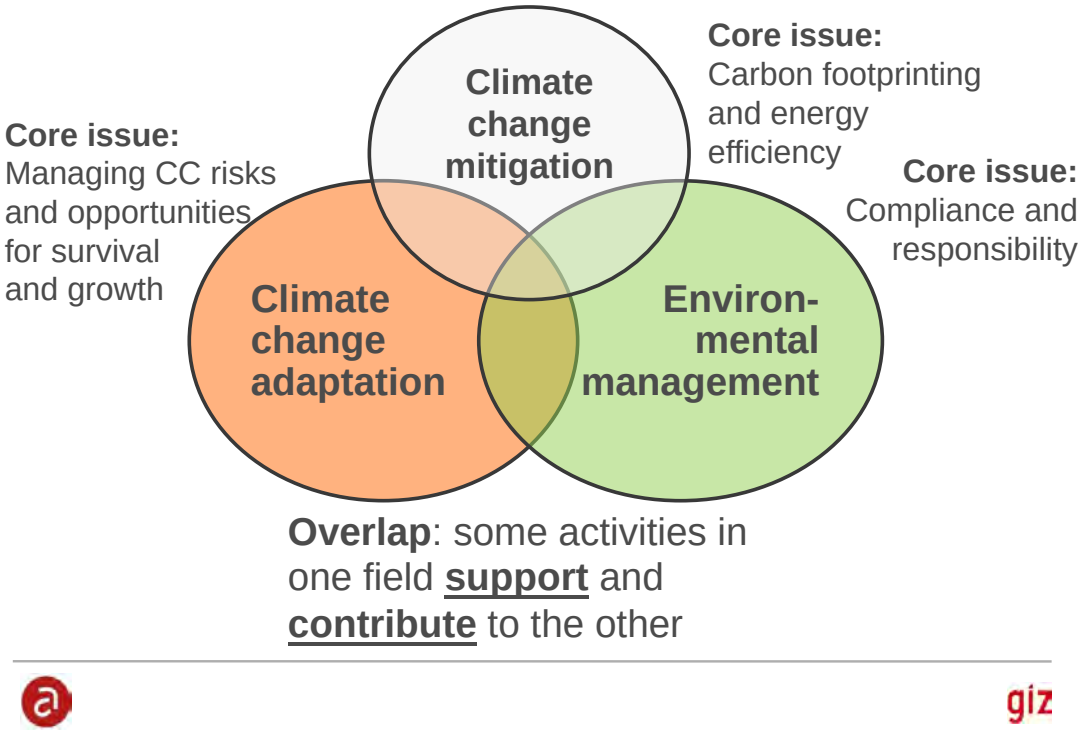
Many adaptation measures have a "mitigating side effect" by reducing GHG emissions:

- Introducing energy efficiency measures which reduce vulnerability to power cuts often occurring in heat periods and extreme weather
- Installing solar panels which render a business less vulnerable to electricity cuts
- Improving insulation of workspaces and storage rooms which protects employees and the stock from cold or heat
- Installing green areas as buffer zones in order to protect the site from floodwater

You can best introduce this theoretical concept by giving examples of mitigation measures in the business context (see above).

The Climate Expert helps to identify adaptation measures:
http://www.climate-expert.in/assessing/identifying-adaptation-measures;
Summary of mitigation and adaptation:
https://spark.ucar.edu/longcontent/climate-mitigation-and-adaptation

Synergies between adaptation, mitigation and env' mgmt



Activities in the fields of environmental management, CCM and CCA focus on different core issues. Differently from the other two perspectives, the core issue of CCA is business survival and growth.

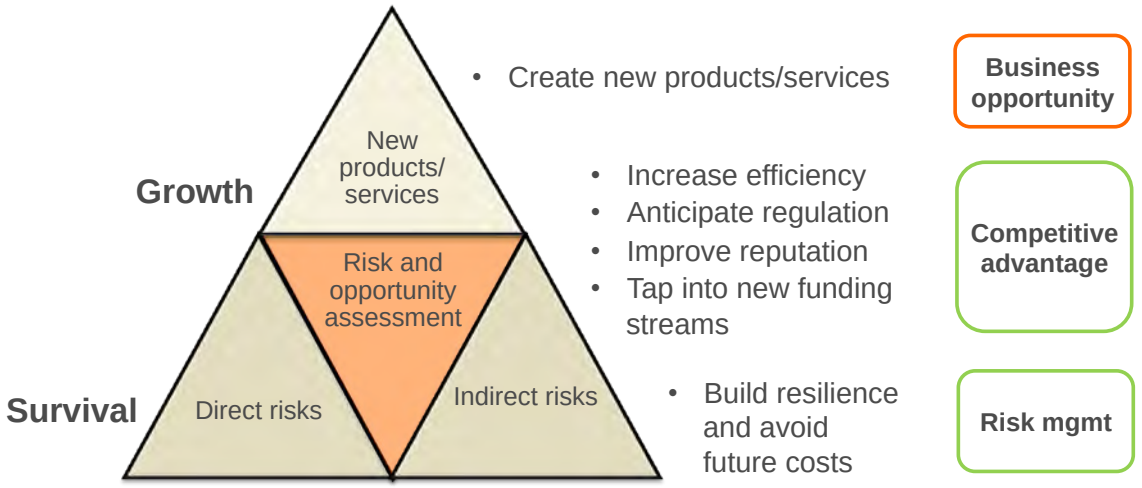
However, activities in the three fields can overlap, thus supporting and contributing to one another. Only mitigation measures can avoid the tipping point where climate change becomes unmanageable, even if extensive adaptation measures are undertaken. However, as some impacts of climate change are unavoidable already today, adaptation is required as well.

Environmental management includes the company's regular activities to control its impact on and interaction with the environment in order to preserve natural resources. Activities include the development, implementation, and monitoring of the company's environmental policy.

Use this slide to make sure that the specific perspective and relevance of CCA is fully understood, connecting the issue to but keeping it distinct from CCM and environmental management. Underline the key focus of adaptation: business survival and growth when faced with the effects of climate change.

Analysis of the interrelationship between mitigation and adaptation by the IPCC:
http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter18.pdf

A business approach to adaptation: Ensuring business survival and growth



Why adapt? Adaptation assures survival and enables growth of businesses in times of changing climate

Source: adelphi

Business survival and business growth are the two aims of business adaptation.

Climate change impacts create direct and indirect risks for a company, but also chances for strengthening its competitive advantage and for seizing new business opportunities.

A risk and opportunity assessment is the crucial first step in adaptation, as it helps companies understand direct risks, indirect risks and market opportunities for a company. On this basis the company can develop measures which:

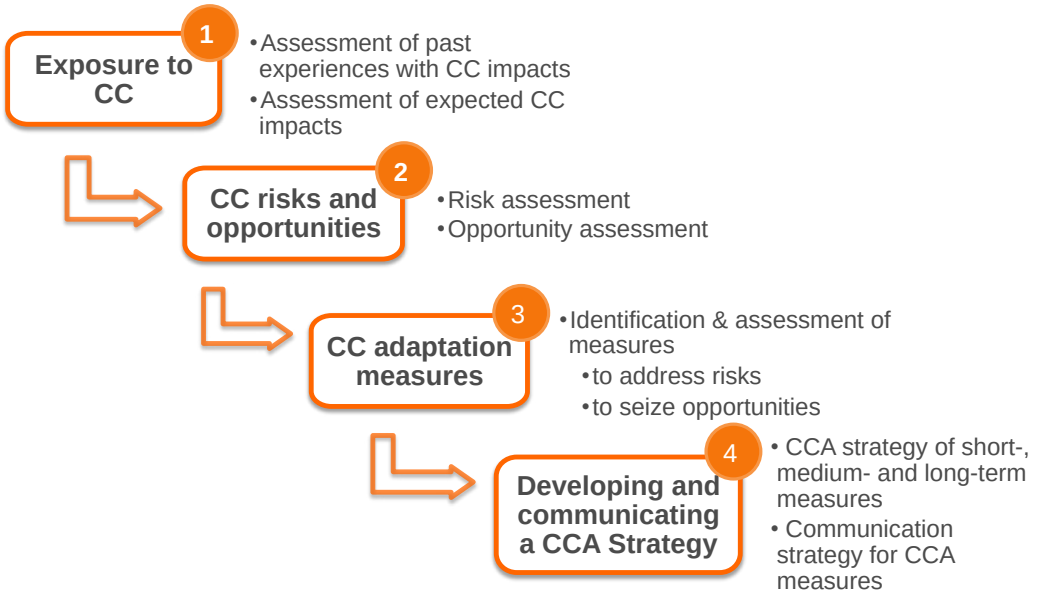
- Ensure that physical assets are safe from climate change impacts and that the business operations remain functioning (e.g., by installing dams to protect machinery in case of flooding)
- Not only reduce risks, but also allow the company to gain in competitive advantage (e.g., water reuse systems which make the company less vulnerable to water shortages and at the same time reduce costs for process water)
- Realise business opportunities through products and services which meet new demands resulting from climate change and the need for adaptation (e.g., innovative material for building insulation)

For ensuring business survival both direct and indirect risks need to be assessed and managed:

- **Direct risks** result from direct climate change impacts, i.e., damages to buildings and plant processes caused directly by climate change phenomena.
- **Indirect risks** emerge if actors start changing their behaviour due to climate change or if framework conditions change. Indirect risks include rises in raw material prices, reduced demand for specific products due to changed weather conditions, non-compliance with governmental standards on resource efficiency which become stricter, or less favourable conditions for loans, if the company's preparedness for climate change is believed to be insufficient.

Growth opportunities in particular emerge if a company develops products and services which help others adapt to climate change.

Adaptation: a four-step approach



This slide spells out the key steps to take in the process of developing an adaptation strategy.

Point out that the preceding session topics provided information on the company's "exposure" to climate change. For an individual company this information has to be refined to consider the climate change phenomena relevant to the exact location of its company premises, suppliers etc.

Steps 2, 3 and 4 will be dealt with in this module.

This approach cannot offer any ready-made solutions. It is a general framework applicable to different companies in different regions, but requires application and further tailoring to specific company contexts.

While the implementation of measures is not immediately supported by the CCA methodology presented in this training programme, all steps required for the identification, prioritisation and integration of adaptation measures are supported by the methodology and worksheets offered in this toolkit.

Quantifying impacts of CC and CCA – example of flood risk for Ind Tex

Damages calculation

➢ Quantifying the costs of **inaction**

Costs caused by floods in 2010	Rs.
Repairs of outside walls	4,00000
Removal of water inside buildings; drying of inside rooms	3,50000
Missed sales (damaged garments; interrupted production)	15,00000
Expenses for sick-days of employees caused by flood	2,50000
Penalty fees for delivery delays	5,00000
Total:	**30,00000**

Note: Due to climate change, the average annual expenses will increase in the future!

giz

Ask participants to quickly share their experiences with damages suffered in the context of climate change, e.g., extreme weather events: When have such damages occurred? How high were the costs?

Develop the cost and benefit calculation in this and the next slide for a different company example if the risk of flooding is not of relevance to your group of participants. For the calculations it is sufficient to use a rough estimate of the costs and returns.

The example of our case company shows that failing to adapt to the impacts of climate change – in this case the growing risk of flooding – causes considerable costs. If IndTex does not implement adaptation measures, the company's average annual expenses due to climate change will increase in the future.

Costs of direct impacts (e.g., physical damages to buildings) are usually much easier to identify and calculate than costs of indirect impacts (e.g., changes in the market demand). Both types of impacts, however, need to be considered.

This calculation helps participants understand that climate change directly influences their financial situation. It is, however, very rough and will be much more complicated in reality.

The following slide will show that adaptation measures can quickly pay off.

Quantifying impacts of CC and CCA – example of flood risk for Ind Tex

ROI ➢ Quantifying the costs and benefits of **action**

Measure: Increasing slope of pavement surrounding factory building, directing water towards green cover

Costs	Rs.	Annual benefits / savings	Rs.
Construction	2,100,000	Risk reduction by 40%	1,200,000
Maintenance (extra to current costs)	0	Reduced water needs for plants	20,000

Payback period	**2 years**
Balance after 5 years	**+ 4,000,000**

giz

The adaptation measure implemented by IndTex leads to savings which after two years already exceed the costs of the measure.

There are several key figures (e.g., return on investment, net present value) to quantify and relate costs and benefits of adaptation measures. By doing so you can identify the measures' monetary payoffs and profitability as well as decide between investment alternatives.

Point out to participants that for other adaptation measures, cost calculations might be more complex. Besides initial investment costs, cost calculations must always consider also the running costs, for instance for the operation and maintenance of technologies. Also, interest rates for loans taken to finance the measure must be factored in.

UNFCC helps assess costs and benefits of adaption options:
http://unfccc.int/resource/docs/publications/pub_nwp_costs_benefits_adaptation.pdf

Discussion

What are you already doing today to address the impacts of climate change?

giz

If during previous discussions participants have already extensively shared their adaptation measures, you can ask participants about particular hurdles they see for their companies to engage in CCA. If time is short, you can as well directly move on to the next topic.

- Ask participants to name initiatives which they have already undertaken to deal with impacts of climate change, such as extreme weather events, reduced water and energy supply in summer months and similar.
- Collect these measures on a flip chart. Use different colours for measures in the broad categories "infrastructure & location", "stakeholders" and "finance and market". This helps participants recall the impact areas and reflect on measures undertaken in all of these.

Flipchart, marker pens in three different colours

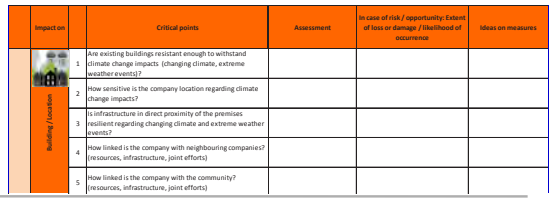
3.3.2 Conducting a climate change risk assessment

Step I: A detailed vulnerability assessment is the foundation of successful adaptation

Goal: Identify the expected impacts on the company

- What climatic changes need to be expected in the regions relevant to the company (factory location, location of suppliers etc.)
- What might be the impacts on physical assets and business operation?

Key tool: Assessment grid



Impact on		Critical points	Assessment	In case of risk / opportunity: Extent of loss or damage / Likelihood of occurrence	Ideas on measures
Building / Location	1	Are existing buildings resistant enough to withstand climate change impacts (changing climate, extreme weather events)?			
	2	How sensitive is the company location regarding climate change impacts?			
	3	Is infrastructure in direct proximity of the premises resilient regarding changing climate and extreme weather events?			
	4	How linked is the company with neighbouring companies? (resources, infrastructure, joint efforts)			
	5	How linked is the company with the community? (resources, infrastructure, joint efforts)			

A risk assessment of climate change impacts on the companies requires as a first step to assess in detail the vulnerability of a company, i.e. its exposure to climate change phenomena, the potential impact on its physical infrastructure and processes, and its capacity to respond to these challenges.

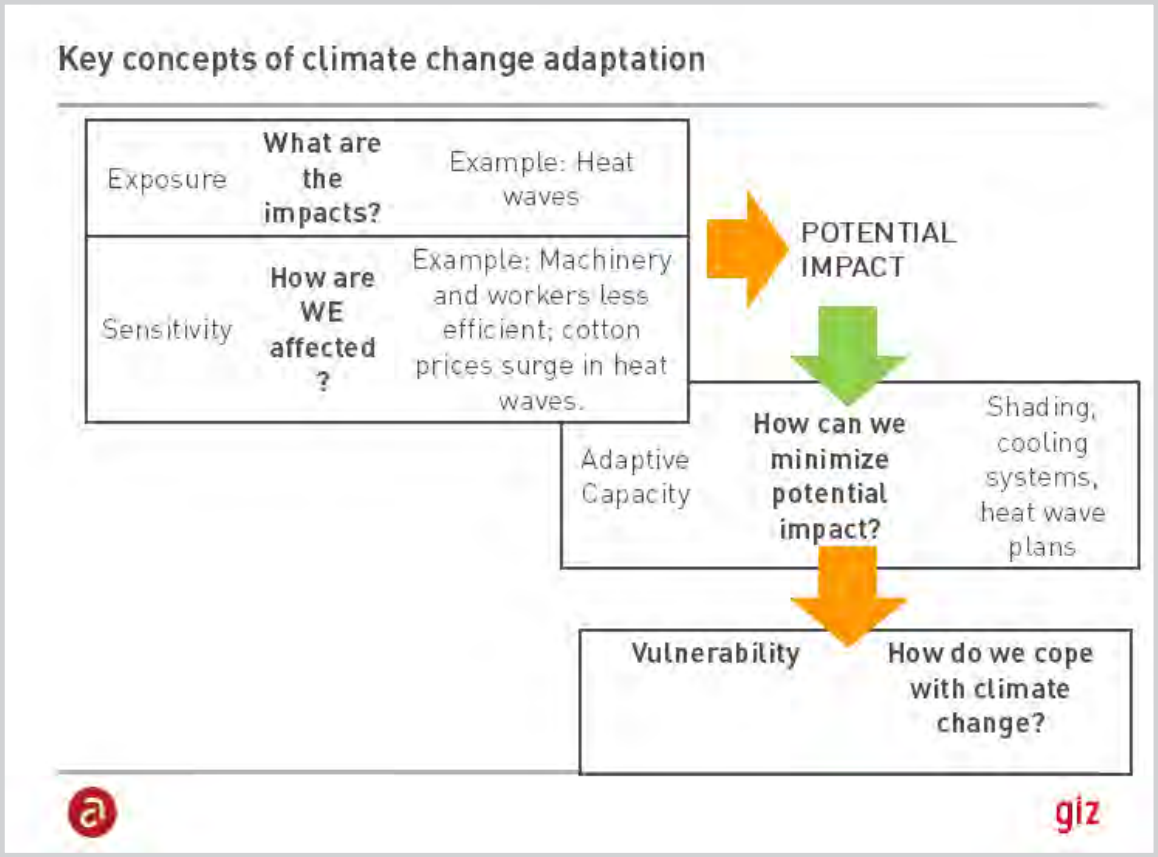
The concept of vulnerability is explained in detail on the next slide.

Refer back to the "Assessment grid" of climate change sensitivity and adaptive capacity distributed to participants during the first module. This is the key tool to support a vulnerability assessment for the company. The information gathered in the assessment can then be further assessed and prioritised in terms of risks for the company, as explained on the following slides.

Worksheet "Assessment grid" (possibly already distributed during Module 1), see Excel file, spreadsheet "IIa – Assessment grid".

In Chapter 2.1 of the Consultant's Manual you can find further explanations on how to use the worksheet.

IPCC'S definition of vulnerability:
http://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch19s19-1-2.html



The extent of a company's vulnerability is defined by three factors: its exposure, its sensitivity, and its adaptive capacity to climate change impacts.

Vulnerability is the degree to which a system is susceptible to and unable to cope with negative effects of climate change.

Not the exposure as such, but the company's specific sensitivity to the climate change impacts it is exposed to, define the potential impact on the company.

How strongly this potential impact will materialise, however, finally depends on the adaptive capacity of a company. Adaptive capacity refers to a system's capacity to adjust to climate change so that the potential (negative) impact of a particular climate change phenomenon is minimized. Adaptive capacity can also be expressed by the term "resilience".

Vulnerability increases as the magnitude of climate change or sensitivity increases, and decreases as adaptive capacity increases. Vulnerability is highest where there is the greatest exposure and sensitivity to climate change, while adaptive capacity is low.

These are very theoretical concepts. Rephrase them as questions directly related to the company.

- Exposure: "What climate change phenomena does my company have to deal with at all? Is it more increasing heat waves, or rather the risk of flooding, or both? What phenomena are expected at my company location, in my logistical chain and on my key markets?"
- Sensitivity: How exactly does the identified phenomenon – for instance flooding – affect my business? (Here, a company should look at the seven impact areas!)
- Adaptive capacity: What measures are already in place to protect the company from these impacts, e.g., to prevent storage sheds from flooding?

Step II: The risk assessment helps structure and prioritise climate-change related risks

Processes

Risk	Assessment Criteria: Probability of occurrence (0-3)	Assessment Criteria: Extent of damage (0-3)		Results: Level of risk	Results: Priority
Cost increases as more energy needs to be supplied from diesel-generators	3	1	=	3	B
Production stops due to more frequent power cuts	2	3	=	6	A
Delivery delays due to production stoppages	2	3	=	6	A

Ask whether the participants already use a risk assessment for their business and which role climate change impacts such as extreme weather events have played here so far.

Following the vulnerability assessment (step I), key risks can be identified, assessed and prioritised using two criteria

- the probability with which they will occur;
- the extent of the damage, if they occur.

By multiplying these two figures, the level of risk can be determined. The scores of different risks can be compared, allowing the company to prioritise some risks over others.

The illustration shows a part of the worksheet "Risk assessment" which is introduced in the next slide. The worksheet facilitates a quantification and prioritisation of risks. The slide above serves to introduce the basic methodology to calculate risks, which then allows comparing and prioritising risks.

Conducting a risk assessment is a standard procedure for many companies. In times of climate change, it is important to integrate climate specific risks into the assessment.

The scale for scoring the probability of occurrence in this example is defined as follows:

- 1 = remains the same as currently or increases to a minor extent
- 2 = increases notably
- 3 = increases significantly

The scale for scoring the potential damage is defined in the following way:

- 0 = no negative impact on the survival and growth of the company to be expected
- 1 = some negative impact to be expected, but the effects are only of minor relevance to the survival and growth of the business

- 2 = considerable negative impact to be expected affecting the survival and growth of the business, but the potential loss or damage remains manageable
- 3 = strong negative impact expected on the survival and growth of the business

Present the three examples mentioned in the table in detail. Make sure that everybody understood how the scoring was done.

Point out that the scoring in this example is very simple. If more accurate information is available we recommend that companies use a more detailed scale differentiating between five levels of probability of risk/potential damage (minor, small, medium, big, very big). A five-scale scoring is used also in the worksheet "Risk assessment" presented in the next step.

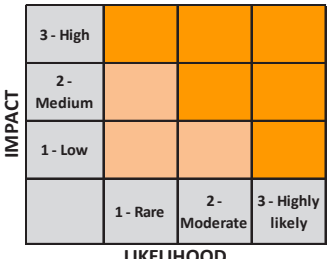
Tools for evaluating and prioritising risks

Purpose

- Assessing and quantifying identified risks
- Priorisiting risks according to impact and likelihood

Output

Hierarchy of risks to address through adaptation measures



Risk assessment

#	Climate phenomenon	Affected area: Infrastructure and operations	Affected area: Stakeholders	Affected area: Finance and market	Resulting risk	Description	Time frame	p (Probability of occurrence)	D (Damage/ danger)	R (Risk (probability * extent of damage))	Prio	Comments
1		☐	☐	☐						0		

Ask participants to show how to use the worksheet using a climate change impact experienced in their company.

Invite participants to give feedback on the worksheet: does the approach seem useful to them?

- Hand out the two worksheets and explain their purpose and content:

  The worksheets "Risk assessment" guides companies in carrying out the risk assessment introduced in the slide before. A "Risk matrix" helps visualise the different priorities of several risks: in the upper right corner the high priority risks are pictured, while the lower left corner assembles low priority risks.

The information in the green coloured columns would have been gathered in the preceding step, the vulnerability assessment.

To properly assess risks it is important to clarify the time frame one is looking at. Here companies need to decide: Which time scale is adequate to oversee potential risks from climate change impacts and integrate them into business decisions?

Give participants 2-3 minutes time to familiarise with the worksheet and to ask questions for clarification. If necessary, use the examples from the preceding slide to illustrate how to use the worksheet.

Worksheet "Risk assessment", see Excel file, spreadsheet "IIb – Risk assessment" and annex of the Consultant's Manual.

Worksheet "Risk matrix", see Excel file, spreadsheet "IIc – Risk matrix" and annex of the Consultant's Manual.

In Chapter 5.2 of the Consultant's Manual you find further explanations on how to use the worksheets.

Exercise: The consulting clinic

giz

Note: The climate change challenge used in the exercise is: more frequent and more intense floods (see hand-out). You can adapt the exercise if this challenge is not relevant to the companies of your participants. You can also amend, reduce or extend the guiding questions provided to best suit your training situation.

Preparation

- Introduce the exercise: a short consulting process with one of the participants assessing the impacts of one climate challenge, namely "flooding", in the key impact areas "infrastructure and operation" and "stakeholders".
- Distribute the prepared assessment grid to all participants.
- Ask one participant to volunteer for the consulting session.

Assessment

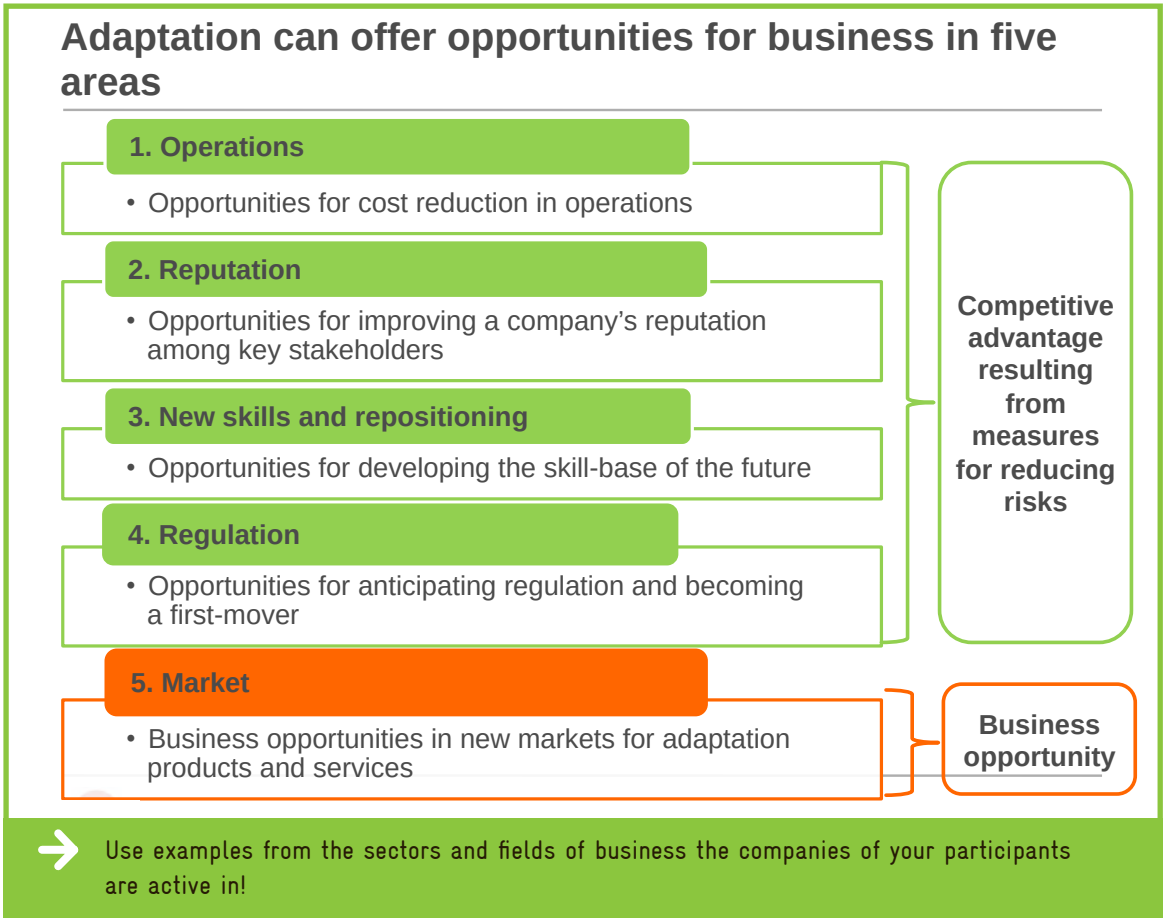
- Assess the sensitivity and adaptive capacity of the participant's company following the guiding questions in the assessment grid. Provide a brief summary (Which areas are highly affected? Which are the key impacts on the company in these areas? Which areas are less affected?).
- List all or a selection of the identified impacts on a flip chart.
- In a discussion with the volunteering participant, score the risks according to their probability of occurrence and their potential damage. Assign priorities A, B or C.
- Point out potential next steps, thus underlining the benefit of the assessment for the company.

Discussion

- Ask the group to share their views about potential benefits, but also problems of the assessment.

	Time frame: approximately 30 min
	Hand-out “Assessment grid for the consulting clinic”
	Flipchart, marker pen

3.3.3 Identifying opportunities of adaptation



→ Use examples from the sectors and fields of business the companies of your participants are active in!

Adaptation offers considerable opportunities, both in terms of gaining in competitive advantage and in seizing business opportunities on new markets. These opportunities can be grouped into five types.

The first four types describe "positive side effects" of measures which are targeted at reducing climate related risks, but at the same time strengthen the company's competitive advantage through: 1) cost reductions in operations, 2) reputational gains, 3) acquiring of new skills which will grow in importance in the future, and 4) anticipating regulation which allows to be a first mover once the regulation comes into place.

Climate change impacts and adaptation needs create or increase demand for innovative products and services facilitating adaptation (type 5). These opportunities do not result from measures for addressing risk, but from a strategic market analysis.

In response to a survey of global businesses (UNGC et al. 2011), 86% see responding to climate risks or investing in adaptation also as an opportunity for their business, both in terms of competitive advantages and of new market opportunities.

Give one concrete example for each type of opportunity (see next slides). But do not go too much into depth, as each type will be looked at in detail in the next slides.

Report by UN Global Compact, UNEP, Oxfam and the World Resources Institute (2011): "Adapting for a Green Economy: Companies, Communities and Climate Change", *http://www.wri.org/publication/adapting-for-a-green-economy*

1. Operations

Competitive advantage through cost reduction

How?

- Introducing technologies / measures which reduce the resource intensity of production processes and products

Benefits

- Cost savings through greater efficiency and effectiveness

Example

- Integrated water-, waste- and energy management
  - ➢ Reduces vulnerability to climate change impacts
  - ➢ Reduces costs due to lower resource consumption

Ask participants to name examples of measures which reduce the vulnerability to climate change impacts, while at the same time reducing costs (in the medium run) – be it examples actually implemented by their companies or ideas of potential measures. Discuss what potential for cost reduction these measures have.

Adaptation measures which address climate risks by rendering operational processes more efficient or proactively avoid costly interruptions or damages lead to cost reductions – and thus strengthening competitive advantage.

How to make business operations more efficient:

- **Measure and track:** identify usage rates for energy, water and ingredients, note them down carefully and develop strategies to improve efficiency, for example by "reducing" and "reusing".
- **Reduce:** Operate plant systems as designed, eliminate leaks, adapt insulation where appropriate and consider investing in new, more energy efficient machinery. Turn off what is not required. Invest in research and development of new products or services with greater adaptability to climate change. Improve storage systems in order to keep stored goods in a perfect state.
- **Reuse:** Evaluate operation processes and reuse resource where appropriate. Determine the cheapest way to treat wastewater and consider using it for lower grade uses where water quality does not have to be so high. Investigate the possibility of rainwater harvesting.

Explain the idea by providing further examples. The next slide shows an example of a water efficiency measure from a company in Gujarat.

Tips by Energystar:
http://www.energystar.gov/ia/business/challenge/learn_more/Manufacturer.pdf Australian "Hints and tips for improving resource efficiency in your business"
http://www.epa.vic.gov.au/~/media/Publications/1255.pdf

Case example: Cost savings through a measure for risk reduction

Adaptation measures for reducing risks often strengthen competitive advantage as well!

Water reuse at metal factory Milestone, Naroda Industrial Estate

Risk reduction: reduced vulnerability to gaps in water supply

Gains in competitiveness: cost reductions through reduced water needs

Ask participants if their companies have already implemented similar measures.

One example of reduced resource intensity is the reuse of water during different steps of the production process.

Such efficiency measures reduce risks for a company as it is less affected by water shortages and changes in water process, and can enhance the company's competitiveness.

The company is located in the state of Gujarat, a particularly drought prone state.

2. Reputation

Competitive advantage through greater trust by stakeholders

How?

- Through dialogue, marketing and cooperation activities which target the community, company staff and their families, local authorities, customers and investors

Benefits

- Consumer loyalty
- Social peace with regard to community
- Better access to financing
- Improved relations with government institutions

Example

- Projects with communities to develop and implement adaptation measures benefiting company and community
  - ➢ Avoid conflicts with neighbouring communities
  - ➢ Demonstrate social responsibility

Ask participants to name examples of how adaptation can strengthen the relationships and build trust with key stakeholders. Ask what benefits such measures have had for their companies.

Adaptation measures can lead to a better reputation among key stakeholders such as employees, surrounding communities, governmental authorities or buyers.

Creating business value in today's competitive environment depends on intangible assets such as good relations with a company's key stakeholders. This, in turn, depends on trust.

Proactive adaptation to climate change impacts can strengthen reputation and trust:

- The company demonstrates that it knows about potential risks of climate change impacts to the company and effectively addresses these risks through adaptation measures.
- The company can implement adaptation measures jointly with neighbouring communities, e.g., by jointly installing bunds for flood protection. This not only strengthens the resilience of the business, but also demonstrates that the company takes on its social responsibilities.
- Through a transparent communication of adaptation efforts and achievements the company wins the trust of buyers, government programmes and financial institutions.

Explain the idea by providing further examples.

Chris Laszlo on the role of trust:
http://www.triplepundit.com/2011/07/role-trust-sustainable-business/
GRI Homepage:
https://www.globalreporting.org/reporting/Pages/default.aspx

3. New skills and repositioning

Competitive advantage through a strategic repositioning

How?

- Review internal processes and skills: are they adequate to address risks and seize opportunities from adaptation?
- Innovate internal processes to be future-ready
- Reposition skill-base towards future-oriented markets

Benefits

- Long-term sustainability of the business
- Competitive advantage through early repositioning

Examples

- Implement training programmes on energy-efficiency for your staff
- Integrate an environmental engineer in your team who can increase the resource efficiency of your products

giz

Invite companies to brainstorm which particular skills and technologies will become more important for companies in the future when looking at the challenge of adapting to climate change.

Answers could be for instance: knowledge and technical skills for improving water or energy efficiency or for developing heat resistant products.

To effectively adapt to climate change, new technologies and related skills may be required. Developing these technologies and skills is beneficial for the company in many ways in the future.

- They can reduce the cost of production processes, if implemented internally (e.g., improving energy efficiency of existing processes).
- They provide the basis for developing new products and services to be offered on the market (e.g., development of more heat resistant product design).

Participants might argue that developing this new skill base is asking too much of their companies.

In this case underline that the skill-base can be developed step-by-step, for instance in a first step by hiring an environmental engineer who reviews existing processes in terms of their energy efficiency and makes suggestions on initial measures for improvement.

4. Regulation

Competitive advantage from anticipating regulation

How?

- Monitor developments in the regulatory field concerning adaptation topics (water efficiency, toxic discharge etc.)
- Engage in dialogue with policy makers
- Prepare your business for potentially upcoming regulation

Benefits

- Advantage over competitors as you achieve compliance early on, while competitors are punished for non-compliance
- Early access to upcoming support or funding schemes

Examples

- Keep yourself informed about regulatory developments through participation in industry fora, dialogue processes etc.
- Develop actions plans / implement measures proactively

giz

Discuss with participants in which areas they expect regulatory changes relating to climate change impacts and adaptation and in which timeframes they expect these changes.

Anticipating regulatory changes related to climate change impacts offers companies the opportunity to jump ahead of their competitors once this regulation is actually put into place…

- Because they comply with the regulation, while competitors are taken by surprise, face penalty fees or are even forced to temporarily close their business
- Because you can tap new funding schemes first as your action plans are already prepared and project ideas for implementation are already developed

Activities for anticipating regulation can create operational, reputational, and skills development advantages as well. For instance it is certain that being among the companies who fully comply or even are ahead of regulation once it is introduced will improve their reputation among policy makers, buyers and investors.

5. Market

Business opportunities on new markets

How?

- Analysing shifts in customer preferences and regulatory frameworks due to climate change impacts
- Developing new products and services which are climate-resilient and/or facilitate adaptation

Benefits

- First-mover advantages in markets of the future

Example

(1) Product: Innovative, sustainable insulation material

(2) Service: Consulting services on strengthening water efficiency in production processes

giz

Ask companies to cite examples or develop ideas on adaptation products and services in their business sector.

If companies are hesitant to share ideas from their own business context, use the case company IndTex, a textile manufacturer, as a hypothetical example (see Chapter 5).

Climate change impacts such as rising temperatures or greater frequency of heavy rains and flooding create new needs for products and services which help protect people, infrastructure and companies from these impacts. When looking at adaptation from a business development perspective, companies can become first movers on new markets for products and services which help others adapt to climate change.

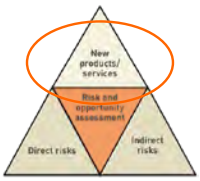
A study by McKinsey (2011) estimates that the clean technologies market will reach $1.6 trillion by 2020, up from $670 billion in 2010. Clean technology includes recycling, renewable energy, information technology, green transportation, electric motors, green chemistry, lighting, and many other appliances which have a smaller environmental footprint than other comparable products. How to become the first mover:

- Assess your company's specific competencies in light of the question: what products or services can we offer which help others adapt to climate change?
- Invest in R&D to find out about future trends and needs.
- Invest resources in these areas more aggressively, refocus your business segments.
- Buy a complimentary company that will leapfrog your business ahead.

Developing new products and services for adaptation is a quite advanced step in a company's CCA strategy. For SMEs the most urgent task is to reduce the risks climate change impacts pose to them. However, reflecting on the business opportunities early on helps create buy-in and develop a vision for CCA as part of the business strategy.

McKinsey on the business of sustainability:
www.mckinsey.com/~/media/mckinsey/dotcom/client_service/Sustainability/PDFs/Putting_it_into_practice.pdf

Business opportunities in adaptation are manifold



Opportunities for…

1. Products that cater to **new needs resulting from climate change**
2. Products and services which help **cope with/adapt to changing climate**
3. Products which are **easier to produce** because of the change of climatic conditions

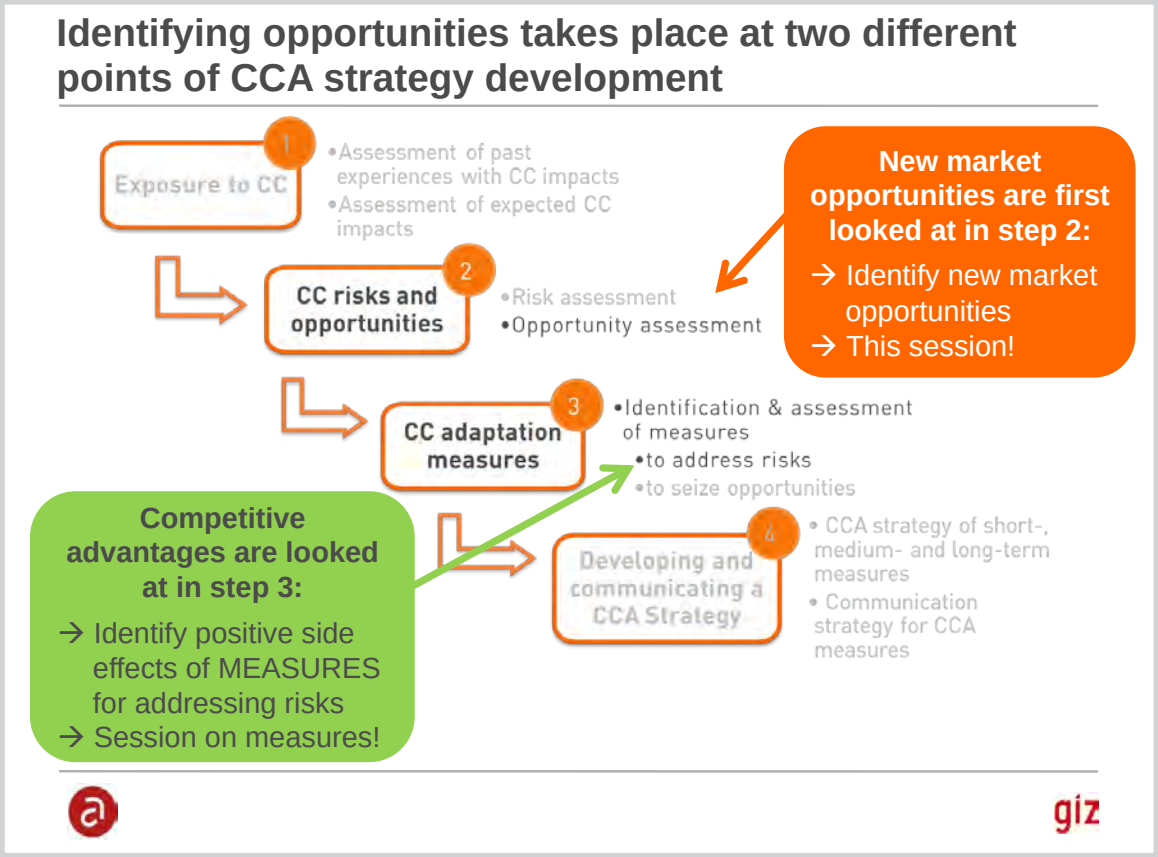
Example: Temperature rise / heat waves

- Protect people from heat
- Protect goods from heat

→

- Energy efficient ventilation systems
- Heat-resistant coating

There are three types of products and services which companies can develop to adapt to climate change.



The methodology and tools for CCA strategy development support companies in identifying and assessing opportunities. However, while the identification of market opportunities is supported by a separate tool introduced in the next slide, the first four types of opportunities are further looked into only in the session on adaptation measures (see Chapter 3.3.4).

This is because the first four types of opportunities emerge from adaptation measures for addressing risks. Besides reducing a specific climate change risk they allow the company to strengthen competitive advantage. Again one example:

Introducing water reuse systems reduces the company's dependence on grid or groundwater (→ risk reduction), but also allows to save costs, as water consumption goes down (→ opportunity I: cost reductions in operations)

As these opportunities result from adaptation measures for addressing risks, their assessment is part of the assessment of measures for addressing these risks and the respective worksheet "List of measures for addressing risks". They are looked at as "positive side effects" of these adaptation measures.

The identification of new market opportunities occurs independently from concerns with climate risks for the company. It is supported by a separate tool introduced in the next slide. In Chapter 3.3.4 on adaptation measures a second tool is introduced which helps in assessing and prioritising measures for seizing these market opportunities.

Identifying new market opportunities

Purpose

Identify opportunities on markets resulting from the need for adaptation; conduct first rough assessment

Output

List of ideas on products and services which could be added to the company's portfolio

New market opportunities

#	Climate phenomenon	Target market / customers	Expected market changes	Timing / urgency	Potential product / service / innovation	Type of product / service / innovation: Has properties with reduced climate vulnerability	Type of product / service / innovation: Facilitates adaptation	Type of product / service / innovation: Other	Challenges and potential solutions	Benefits	Timing of the measure / comments
1											
2											
3											

- Present the purpose, content and application of the worksheet to the participants:
  The worksheet "New market opportunities" supports companies in identifying new market demand which results from the need for adaptation. With regard to this demand the worksheet then facilitates developing preliminary ideas on what products or services the company could develop to meet this new demand.
- How to assess and prioritise measures for addressing these opportunities will be introduced in Chapter 3.3.4 on adaptation measures.

Give participants a few minutes to familiarise themselves with the worksheet and ask questions for clarification.

If relevant for you, point out how you can assist companies in completing this worksheet as part of a consulting or coaching project.

Worksheet "New market opportunities", see Excel file, spreadsheet "IId – New market opportunity" and annex of the Consultant's Manual.

In Chapter 5.3 of the Consultant's Manual you can find further explanations on how to use this worksheet.

Discussion

What competitive advantages and business opportunities do you see for your company / Indian SMEs?

giz

- Ask participants to discuss which competitive advantages and business opportunities in adaptation they see for their company or for Indian SMEs more generally.
- Encourage them to reflect on particular strengths of Indian SMEs, but also particular hurdles to seizing these advantages and opportunities (e.g., limited resources to invest in R&D etc.).
- Note down strengths and hurdles on a flip chart.

Flipchart, marker pens in three different colours

3.3.4 Identifying, assessing and prioritising adaptation measures

1. Adaptation measure - technical (grey) measures

http://www.oxfam.org/en/development/india-coping-flood-situations

Source: http://www.applegateinsulation.com

- Technical solutions to reduce the company´s vulnerability
- Examples: insulation for buildings, flood- and storm-resistant construction of buildings, physical barriers to protect buildings from floodings
- Features: **immediate risk reduction**, medium- and long-term pay-offs

giz

→ Ask participants: what other examples of grey measures can you think of that your company has implemented?

→ If the examples given are not particularly relevant to your group of participants, replace these by other examples. Refer to Box 1 for assistance in this.

There are three different types of adaptation measures, which are introduced in the next slides. The first type is technical or "grey" adaptation measures. These are technical solutions for adaptation, e.g., dam constructions.

The other two types of measures presented in the next slides are

- "green" measures: making use of ecosystem services, e.g. creation of flooding areas
- "soft" measures: non-infrastructure measures, e.g. insurances, information services

Make sure to name a number of examples to make participants get an idea of grey adaptation measures.

UN Global Compact's Ten Case Studies on Business Contributions to Adaptation: *http://www.unglobalcompact.org/docs/issues_doc/Environment/climate/Business_and_Climate_Change_Adaptation.pdf*

2. Adaptation measure - green measures

Source: http://www.geograph.org.uk

Source: adelphi

- Ecosystem-based adaptation measures
- Examples: installation of flood storage areas, planting of trees, green roofs and walls
- Features: low-cost, flexible solutions to increase the adaptive capacity and to limit climate change impacts

giz

→ Ask participants: "What other examples of green measures can you think of that your company has implemented?"

→ If the examples given are not particularly relevant to your group of participants, replace these by other examples. Refer to Box 1 for assistance in this.

"Green" adaptation measures are based on ecosystem services. For example, a meadow can serve as a flooding area to channel water away from factory buildings. Green measures are often cheaper and more flexible than technical solutions.

Underline that green measures often have a "mitigating side-effect", as the green areas function as carbon sinks. Plantations can furthermore enhance the air quality and atmosphere on company premises.

Database of case studies on green and blue infrastructure in urban areas:
http://www.grabs-eu.org/membersArea/files/Database_Final_no_hyperlinks.pdf

3. Adaptation measure - soft measures

- Managerial, non-infrastructure measures
- Examples: monitoring of environmental data and adaptation progress within the company, taking up climate change relevant insurance (e.g., flood insurance), formation of a climate adaptation team
- Features: adaptation to increase the **internal /organisational** capacity and ability to deal with climate change

giz

→ Ask participants: "What other examples of soft measures can you think of that your company has implemented?"

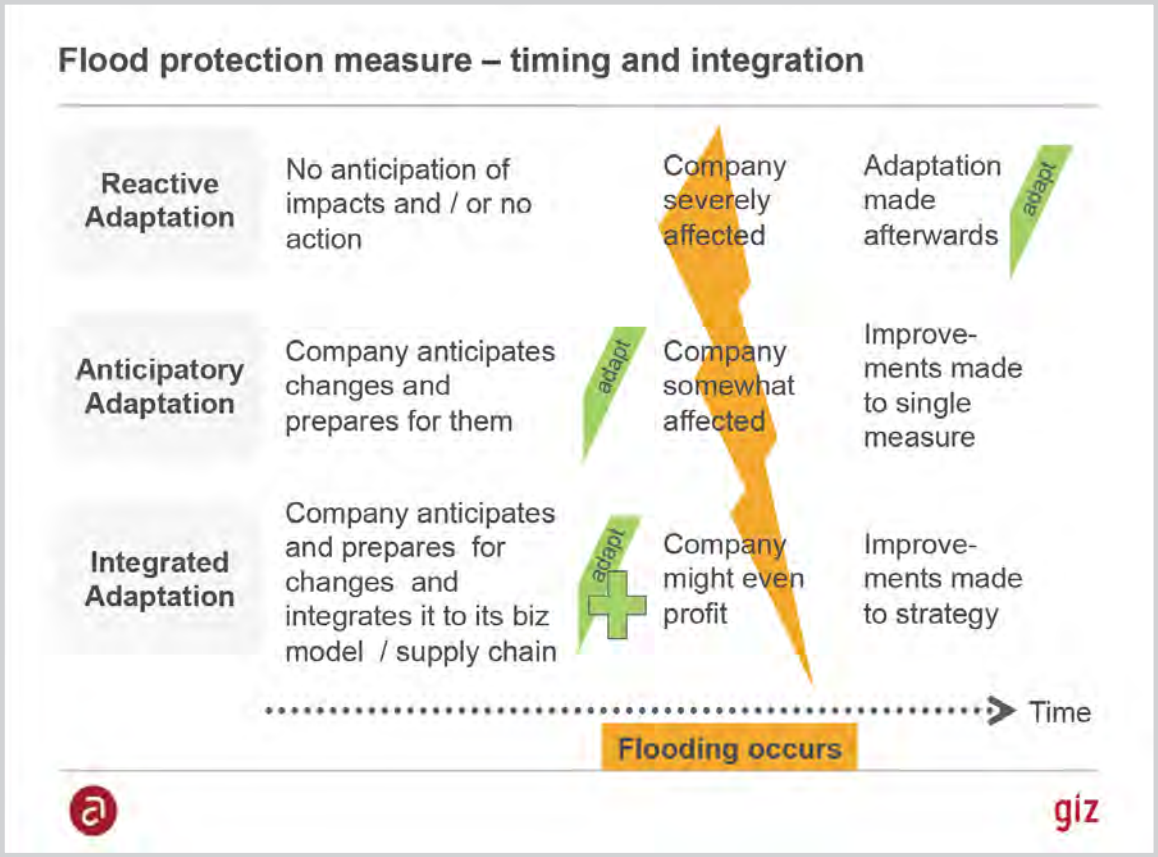
→ If the examples given are not particularly relevant to your group of participants, replace these by other examples. Refer to Box 1 for assistance in this.

"Soft" adaptation measures focus on intangible assets such as information, managerial processes, policy and strategy development, and institutional arrangements.

Soft measures are crucial for an effective risk and opportunity management concerning climate change impacts on the company.

They also often accompany the implementation of grey or soft measures, as these may rely on particular skills and/or management processes.

Make sure to name a number of examples to make participants get an idea of what soft adaptation measures refer to.



Depending on the timing and integration of adaptation measures, the impact of climate change on the company can vary enormously. Both anticipatory and integrated adaptation allow for a proactive adaptation before damage occurs. Integrated adaptation integrates CCA comprehensively into the business strategy, helping the company to also seize business opportunities from adaptation.

Reactive: adaptation measures are implemented after the company has already been affected by climate change, e.g. the raising of dykes surrounding the premises after they have been repeatedly flooded.

Anticipatory: the company anticipates changes and prepares for them by implementing targeted measures before impacts are observed; e.g., identifying rising temperatures as a risk for the company and proactively improving the insulation of the workspaces.

Integrated: all company decisions and processes are reviewed in light of the risks and opportunities of climate change impacts on the company, and a combination of measures is implemented to adapt the company in the short-, medium and long run. A planned integration allows to effectively manage risks, make use of synergies between measures, seize benefits and use new business opportunities from adaptation.

Adaptation options in practice: Response of a food processor in Ahmedad to increasing heat

Impacts on	Gradual change of climate – heat: food processing, Ahmedabad
Buildings / Infrastructure	Secure and increase water sources
Processes	Water recycling system
Logistics and Stock	Heat-resistant roof for storage depot
People	Collaboration with community for joint water management
Market	Product offer with heat-protecting packaging
Finance	Credit for energy efficiency investment

You can also use the case study of IndTex to showcase adaptation measures a company can undertake in the seven impact areas (see Chapter 5.3.3). If the participants are not yet familiar with the case study yet, give a short introduction to the case company and the climate change impacts it faces (see slides in Section 5.3.1).

Adaptation options in practice: Response of a chemical company in Faridabad to the risk of flooding

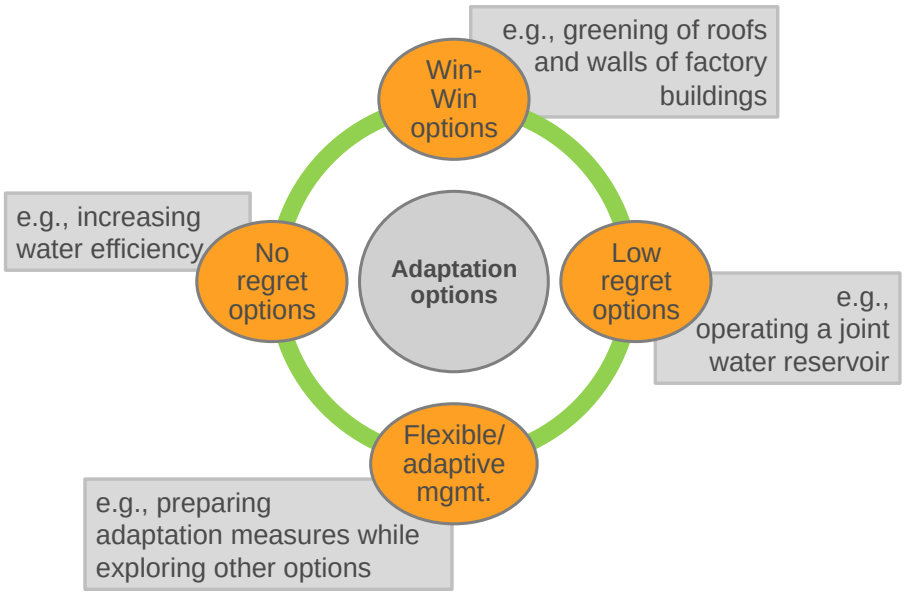
Impacts on	Extreme weather – flooding: chemical company, Faridabad
Buildings / Infrastructure	Secure most important machinery from floods
Processes	Close unwanted leakages
Logistics and Stock	Emergency plan for keeping up supply to market
People	Emergency plan for employees
Market	Regional diversification of buyer base
Finance	Insurance against damages from extreme weather

giz

Impacts of global warming can be felt gradually through the slow change of climate and/or immediately through extreme weather events!

The different impact areas of a company need to be considered for both gradual and extreme cases of climate change impacts.

Adaptation options with particularly positive side effects



Even if there is uncertainty concerning climate change impacts, certain adaptation options will always be helpful. These include the four types of options highlighted in this slide.

No-Regrets Options: Adaptation measures that are worthwhile whatever the extent of future climate change, including measures which are cost-effective already under the current climate conditions. No-regrets options are very likely to be implemented (obvious and immediate benefits) and help to build experience of companies in implementing CCA. These experiences can be used for further assessments and measures.

- Example: Reducing leakage from water utility infrastructure

Low-regrets (or limited regrets) options: Adaptation measures for which the associated costs are relatively low and for which the benefits, although primarily realised under projected future climate change, may be relatively large.

- Example: Operating a joint water reservoir as additional water storage facility

Win-Win options: Adaptation measures that minimise climate risks or maximise the exploitation of potential opportunities, while at the same time having other social, environmental or economic benefits.

- Examples: Green roofs and green walls which have multiple benefits, e.g., reducing building temperature and rainfall runoff from buildings, increasing green spaces on the premises, and reducing energy use for both heating and cooling.

Flexible or adaptive management options: Adaptation measures which can be adjusted in a step-by-step process rather than providing once and for all solutions. This approach helps adjust measures to the real intensity of climate change impacts and allows integrating innovative technologies or solutions developed in the future.

- Example: Preparing adaptation measures but exploring other options to see if and when implementation of the measure is necessary.

The UK Climate Impacts Programme identifies adaptation options:
http://www.sfrpc.com/Climate%20Change/6.pdf

Getting from impacts to adaptation measures for addressing risks – a four-step approach

giz

Once a company knows about the key risks climate change impacts pose to the company, the next steps are to identify, assess and prioritise measures to select the ones to be implemented.

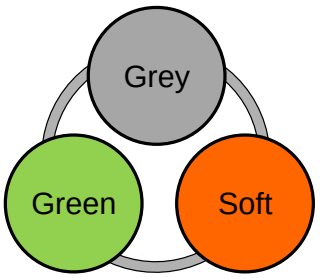
Stick with this slide only briefly, as the details on how to actually implement these steps follow in the next slide.

Point out to participants that at this point you are only looking at measures for risk reduction. How new business opportunities emerging from the need for adaptation can be identified, assessed and prioritised, will be looked into towards the end of this chapter. The four general steps also apply to developing measures in product/service development.

You can also already give the hint that at the end of this module the participants will be invited to join in on an exercise in which they identify, assess and select adaptation measures for their own companies.

A measure analysis helps identify and prioritise

Assess measures considering their…



Potential for risk reduction

Feasibility
- Technical feasibility
- Internal feasibility (skills)
- Investment and running costs

Positive side effects
- Potential for cost reductions
- Synergies with other measures
- Positive climate / environmental / social impacts
- Reversibility

Negative side effects
- On climate / environment / community
- On existing processes and approaches

giz

A company must make a decision on which measures to implement in which time frame in order to effectively adapt to climate change. Key criteria for assessing and prioritising different measures are their potential for risk reduction, their feasibility, and their positive and negative side effects.

Potential for risk reduction: how helpful is the measure? Will it be necessary to implement additional measures to fully tackle the risk?

Feasibility: does the company have the required resources to implement the measure? This assessment includes three aspects:

- Technical feasibility: How complex is the technical implementation of the measure? Has a similar measure been implemented before?
- Social acceptance: How many stakeholders are involved in the process? Is the project more likely to cause conflict or to be accepted within the company?
- Internal implementation: How time-consuming is the planning process? Are many departments of the company involved?

Positive side effects: does the measure have positive effects on aspects of the business which had not been targeted by it?

Negative side effects: Will other aspects of the business, the environment, or external stakeholders such as communities suffer from the implementation of the measure?

Underline that the CCA toolkit supports companies in implementing this assessment. The respective work sheet is introduced in the next slide.

Identifying, assessing and prioritising adaptation measures – the "List of measures for addressing risks"

Purpose Assessment of measures to allow for prioritising and pre-selection

Output Priority list of adaptation measures for the company

List of measures for addressing risks

						Feasibility					Positive side effects					Negative side effects			Conclusion		
#	Risk	Prio	Adaptation measure	Technology level	Level of risk reduction	Technical feasibility	Internal feasibility	Investment costs	Running costs per year	Expected amortisation period	Potential for reducing costs	Additional costs low due to supplementing the existing approaches	Contributing to climate protection	Contributing to other sustainability goals	Reversibility/ flexibility	Negative social / community impacts	Negative environmental impacts	Negative impacts on existing approaches	Prio	Starting point	Notes and comments
1																					

giz

- Present the purpose, content and application of the worksheet to the participants:
  The worksheet helps companies assess and prioritise different adaptation options to tackle potentially harmful climate change impacts. In doing so, reflecting on positive side effects allows them to consider opportunities for gaining competitive advantage through adaptation (see Chapter 3.3.3).

When creating an inventory of measures it is helpful to…

- Start with high priority risks, as identified in the preceding risk assessment
- Include measures from all three categories (grey, green, soft) with short-, medium- and long-term orientation
- Look for measures which address several risks at the same time
- State the measures in a concrete but simple manner to allow for easy analysis and comparison
- Include as many colleagues as possible from other departments, locations and regions in the process of identifying and assessing measures for adaptation
- Get inspiration from other companies who are faced with similar risks

Give participants a few minutes to familiarise themselves with the worksheet and ask questions for clarification.

If relevant for you, point out how you can assist companies in completing this assessment as part of a consulting or coaching project.

Worksheet "List of measures for addressing risks", see Excel file, spreadsheet "IIIa – Measures-Risk" and annex of the Consultant's Manual.

In Chapter 6.1 of the Consultant's Manual you can find further explanations on how to use the worksheets.

Assessing and prioritising measures for seizing new market opportunities

Purpose Assessing and priorisiting measures for seizing market opportunities resulting from adaptation needs

Output Ranked list of products and services to be considered in portfolio of the company

List of measures for addressing new market opportunities

#	Climate phenomenon	Target market / customers	Expected market changes	Timing / urgency	Potential product / service / innovation	Revenue / Market (*2)	Technical feasibility	Organisa-tional feasibility	Financial feasibility	Sum	Prio	Notes and comments
1												
2												
3												

- Present the purpose, content and application of the worksheet to the participants:

  The worksheet introduced in the previous slide supports companies in identifying, assessing and prioritising measures for reducing risks. Many of these measures will have positive side effects such as cost reductions or reputational gains which can lead to a competitive advantage for the business.

  Besides measures for addressing risks, an adaptation strategy can also encompass measures targeted at developing new products and services which will be demanded more strongly due to climate change and the need for adaptation (see Chapter 3.3.3).

  The worksheet presented in this slide supports companies in assessing and prioritising such measures for product and service development as part of an adaptation strategy. It builds on the assessment of market opportunities facilitated by the worksheet "New market opportunities" (see Chapter 3.3.3)

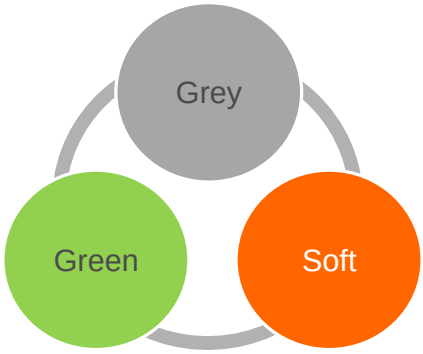
Give participants a few minutes to familiarize themselves with the worksheet and ask questions for clarification.

If relevant for you, point out how you can assist companies in completing this assessment as part of a consulting or coaching project.

Worksheet "List of measures for addressing new market opportunities", see Excel file, spreadsheet "IIIb – Measures_New markets" and annex of the Consultant's Manual.

In Chapter 6.2 of the Consultant's Manual you can find further explanations on how to use the worksheets.

Exercise: Developing adaptation measures



Time frame:

- 10 minutes selection of impacts
- 20 minutes group work
- 15 minutes presentation and discussion of results

giz

Instead of this more general example you can use the role play "Developing adaptation measures for IndTex" at this point (see Chapter 5.3.3). If the participants are not yet familiar with the case study, give a short introduction to the case company and the climate change impacts it faces (see slides in Chapter 5.3.1).

Instructions:

Step 1: Selection of impacts to develop measures for

- Starting point: A climate change challenge by which all participating companies have already been affected, e.g., flooding during heavy rains or heat waves
- Participants name impacts they have experienced in their companies
- The moderator collects impacts on a flip chart, grouping them into impact areas
- Participants select impacts they consider of highest priority:
  - Each participant draws one dot next to the impacts which he/she considers having the highest priority for the company to address (1 dot per impact area and participant)
  - Impact areas and impacts with largest number of dots win

Step 2: Group work

- Moderator asks participants to form 3-4 groups, each representing the adaptation team for a specific impact area
- Teams identify, assess and prioritise adaptation measures in the concerned area
- Priority A measures are noted on red cards, priority B measures on yellow cards and priority C measures on green cards.

	**Step 3: Presentation of results** • Groups present their assessments, justifying their decision on priority A/B/C measures • The results are discussed in the whole group: Do other participants agree with the priority categories given to different measures? What other measures would they recommend?
	Time frame: 45 min
	Worksheet "List of measures for addressing risks", see Excel file, spreadsheet "IIIa – Measures-Risk" (already distributed to participants when presenting the preceding slide) In Chapter 6.1 of the Consultant's Manual you can find further explanations on how to use the worksheets.
	Flipchart, moderation cards (red, yellow, green), marker pens and pin board

3.3.5 Developing an adaptation strategy

Planning for implementation – key steps

- ✓ Decide on the extent of engagement
  - Implementation of single measures, e.g., retrofitting of roof
  - Full-fledged strategy for short-, medium- and long-term
- ✓ Determine responsibilities
  - E.g., forming of adaptation team
- ✓ Monitor, evaluate and improve measures / strategy
  - E. g., does retrofitted rooftop withstand heavy storms
- ✓ Communicate your engagement
  - Internally, e.g., newsletter on CC and company's adaptation
  - Externally, e.g., brochure on CCA efforts for buyers

giz

→ Ask participants to name factors that influence the decision on which approach for implementation is most suitable for the company – single measures or full-fledged strategy development. Note these down on a flip chart.

Relevant factors could include: available staff and financial resources of the company, buy-in of top management, degree of sensitivity, prior adaptation efforts etc.

This slide gives a brief overview of the steps involved in developing a full-fledged adaptation strategy, once relevant adaptation measures have been identified.

The development of a full-fledged adaptation strategy, including a strategy for communicating adaptation efforts is a quite advanced step for SMEs. This is why in this training programme only the basic steps (see this slide) and the worksheets supporting these steps (see next slide) are introduced.

Tool for developing an adaptation strategy

Purpose Development of an integrated adaptation strategy considering synergies and barriers

Output Adaptation plan integrating short-, medium- and long-term measures considering

Short-term adaptation measures (Implementation period: next year)

#	Measure	Risk	Opportunity	Type	Affected area	Synergies and conflicts	Integration possibility	Potential barriers	Ideas for over-coming barriers	Success indicators / Monitoring activities
1										
2										

Medium-term adaptation measures (Implementation period: neyt 2-4 years)

#	Measure	Risk	Opportunity	Type	Affected area	Synergies and conflicts	Integration possibility	Potential barriers	Ideas for over-coming barriers	Success indicators / Monitoring activities
1										
2										

Long-term adaptation measures (implementation period: next 5-10 years)

#	Measure	Risk	Opportunity	Type	Affected area	Synergies and conflicts	Integration possibility	Potential barriers	Ideas for over-coming barriers	Indicator for measuring success
1										
2										

giz

The worksheet allows a company to integrate adaptation measures in the short-, medium and long-term into a comprehensive adaptation strategy. This strategy considers synergies between measures as well as potential conflicts. It also spells out success indicators as well as monitoring processes to oversee progress and achievements.

A formal strategy document can make the CCA engagement of a company much more effective. It clearly spells out the company's motives and makes the decision-making process more transparent. As uncertainties about the exact degree of climate change risks are likely to persist among internal and external stakeholders, an official document can lead to clarification. Formalisation also ensures a sustainable implementation of the strategy over time as implementation becomes more independent of the goodwill and initiative of individual staff.

Typically, SMEs will develop a full-fledged CCA strategy with the assistance of a consultant. If relevant to you, you can use this slide for offering your support in developing such a strategy.

Recommend participants also to have a look at the Climate Expert website for further details on how to develop a full-fledged adaptation strategy.

Worksheet "Strategy", see Excel file, spreadsheet "IVa – Strategy" and annex of the Consultant's Manual.

In Chapter 7.1 of the Consultant's Manual you can find further explanations on how to use the worksheets.

Tool for developing the communication strategy

Purpose Strategic planning internal and external communication

Output Communication plan defining target groups, goals, activities and communication tools

Internal communication

#	Which issue(s) to communicate?	To whom?	What ist the goal?	Through which means of communication?	When? How often?	Who is responsibile?
0						
1						
2						
3						

External communication

#	Which issue(s) to communicate?	To whom?	What ist the goal?	Through which means of communication?	When? How often?	Who is responsibile?
0						
1						
2						
3						

giz

The worksheet supports SMEs in developing a communication strategy for their adaptation efforts – both towards internal and towards external stakeholders. This strategy defines the target groups, communication goals and contents as well as tools and activities.

Communication is important to pool ideas, ensure buy-in among key stakeholders (internally and externally), trigger collaboration and engagement and enhance the company's reputation. Communication can be beneficial at all phases of the CCA engagement: from developing the CCA strategy to implementing measures to communicating achievements. For any communication activity it is crucial to adapt the goals, communication methods and tools to the specific target group.

Some good hints on how to communicate about CCA:

- Avoid catastrophic scenarios; instead try to evoke positive feelings by referring not only to risks, but also to opportunities.
- Balance scientific with more emotion-related information to catch the attention of the audience.
- Communicate uncertainties openly in order to avoid "false promises".

Worksheet "Communication", see Excel file, spreadsheet "IVb – Communication" and annex of the Consultant's Manual.

In Chapter 7.2 of the Consultant's Manual you can find further explanations on how to use the worksheets.

3.4 Handouts

3.4.1 Assessment grid for the "consulting clinic"

Impact on			Critical points	Assessment (affectedness; severity of impact; likelihood of occurrence etc.)	Countermeasures - Ideas
Infrastructure and operations	Location and building	1.	To what extent do the company buildings suffer damages during floods?		
		2.	How is the infrastructure in direct proximity affected during floods?		
		3.	How does infrastructure in direct proximity of the premises deteriorate during floods?		
	Processes	4.	What effects do uncertain energy and water supply have on your manufacturing processes?		
		5.	Is water supply secure when floods occur in your region?		
		6.	Is energy supply secure when floods occur in your region?		
		7.	Are there any measures to provide the processes with energy or water in case of supply gaps?		
	Logistic and stock	8.	Is the availability of supplies affected during floods?		
		9.	Is the storage of goods secure in case of flooding?		
		10.	Is there enough flexibility in transport and delivery of goods to avoid that floods affect your ability to deliver on time?		

Impacts on		Critical points		Assessment (affectedness; severity of impact; likelihood of occurrence etc.)	Countermeasures - Ideas
Stakeholders	Employees and community	11.	Do working conditions deteriorate during floods?		
		12.	Do living conditions of workers deteriorate during floods?		
		13.	How severely is the community affected by flooding, and by the company's adaptation or maladaptation?		
		14.	Are programmes in place to help surrounding communities prepare against flooding or resulting impacts such as gaps in energy supply or health risks during floods?		
	Government and regulation	15.	Have past increases in frequency/ intensity of floods already affected regulations that your company has to comply with?		
		16.	In response to the growing risk of flooding, which regulation do you expect to become more stringent in the future - and which new regulation do you expect?		
		17.	Are government programmes or funding schemes in place to support companies in protecting against flood risks?		
		18.	Are systems in place to regularly monitor development in government regulation and funding schemes programmes?		

3.4.2 Worksheet "Risk assessment"

See Excel file, spreadsheet "IIb – Risk assessment" and annex of the Consultant's Manual.
In Chapter 5.2 of the Consultant's Manual you can find further explanations on how to use the worksheet.

3.4.3 Worksheet "Risk matrix"

See Excel file, spreadsheet "IIc – Risk matrix" and annex of the Consultant's Manual.
In Chapter 5.2 of the Consultant's Manual you can find further explanations on how to use the worksheet.

3.4.4 Worksheet "New market opportunities"

See Excel file, spreadsheet "IId – New market opportunity" and annex of the Consultant's Manual.
In Chapter 5.3 of the Consultant's Manual you can find further explanations on how to use the worksheet.

3.4.5 Worksheet "List of measures for addressing risks"

See Excel file, spreadsheet "IIIa – Measures-Risks" and annex of the Consultant's Manual.
In Chapter 6.1 of the Consultant's Manual you can find further explanations on how to use the worksheet.

3.4.6 Worksheet "List of measures for addressing new market opportunities"

See Excel file, spreadsheet "IIIb – Measures-New Opportunity" and annex of the Consultant's Manual.
In Chapter 6.2 of the Consultant's Manual you can find further explanations on how to use the worksheet.

3.4.7 Worksheet "Strategy"

See Excel file, spreadsheet "IVa – Strategy" and annex of the Consultant's Manual.
In Chapter 7.1 of the Consultant's Manual you can find further explanations on how to use the worksheet.

3.4.8 Worksheet "Communication"

See Excel file, spreadsheet "IVb – Communication" and annex of the Consultant's Manual.
In Chapter 7.2 of the Consultant's Manual you can find further explanations on how to use the worksheet.

4 Wrap-up, feedback and outlook

4.1 Overview of the module

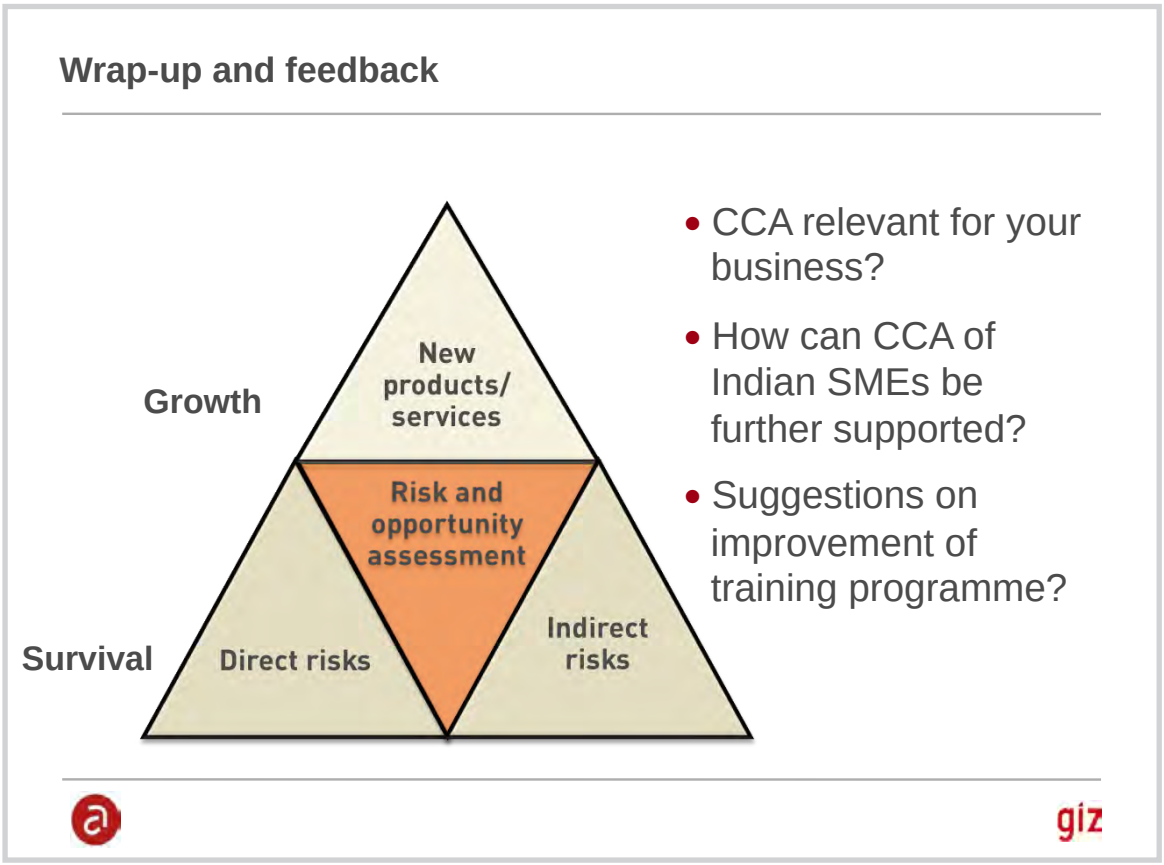
Key Topic	The final module offers a structured approach for gathering feedback on the training and directs attention to the Climate Expert website as tool for further learning and CCA implementation.
Objectives	• Gather feedback from participants on the training and remaining support needs • Create awareness on the Climate Expert e-learning programme After completion of the module, • Have reflected on the contents and learning experience the training achieved for them • Have shared ideas on further support opportunities • Know about the Climate Expert e-learning programme as source for further learning and support in CCA strategy development
Duration	20 min
Methods	Presentation, discussion
Hand-outs	Feedback form
Equipment	Projector, notebook

Session Schedule

Time	Topics of the module	Key material
15 min	**Wrap-up and feedback** • Give a brief summary of the topics covered and knowledge and skills the training aimed to develop • Discussion: after going through the training programme, how relevant do participants consider the issue of CCA to be for their companies, which further support needs they have for adapting their business, and how the training programme could be improved	• Ppt slides 73-74
5 min	**Outlook: The Climate Expert e-learning programme** • Overview on the objectives, topics and features of the Climate Expert e-learning programme	• Ppt slides 75-77 • Hand-out "Feedback form"

4.2 Slides for the presentation

4.2.1 Wrap-up and feedback



The pyramid sums up the business approach to CCA proposed in this training programme. Sum up the key topics dealt with in the training:

- Climate change and its impacts on business
- Risks and opportunities
- CCA measures and strategy development

Using the guiding questions indicated in the slide, have a final discussion and feedback round on the training programme.

For conducting the feedback round, take into consideration the methodological hints given in Chapters 6.3.4 and 0 of this manual.

Inform participants that you will hand out a feedback form at the very end of the programme.

4.2.2 Outlook: The Climate Expert e-learning platform

The Climate Expert is an e-learning programme which seeks to raise the awareness of SMEs and their organisations on the importance of developing a CCA strategy and develop practical skills of companies to assess climate related risks, identify opportunities and develop adaptation strategies.

The methodology and tools introduced in this training programme build on this e-learning website. The participants can use the Climate Expert to deepen the acquired knowledge and skills and get support when now putting the training contents into practice.

The Climate Expert was developed by GIZ's MSME Umbrella Programme, which is funded by the German Federal Ministry of Economic Cooperation and Development, within its mandate to improve the service environment for Indian SMEs and to increase their "responsible competitiveness". The CCA methodology, tools and e-learning contents provided on the website were developed with the support of adelphi, a leading think tank for policy analysis and strategy consulting with a focus on global environment and development challenges.

More information on the content and functionality of the Climate Expert is given in the next slide.

Climate Expert website: *www.climate-expert.in*

The *Climate Expert* helps you develop answers on key questions for adapting your business

- Why does climate change adaptation matter to my business?
- How to identify vulnerabilities for my business?
- How to organise and conduct a risk assessment for my business?
- How to develop a strategy for climate change adaptation with key stakeholders?
- How to monitor and evaluate activities?

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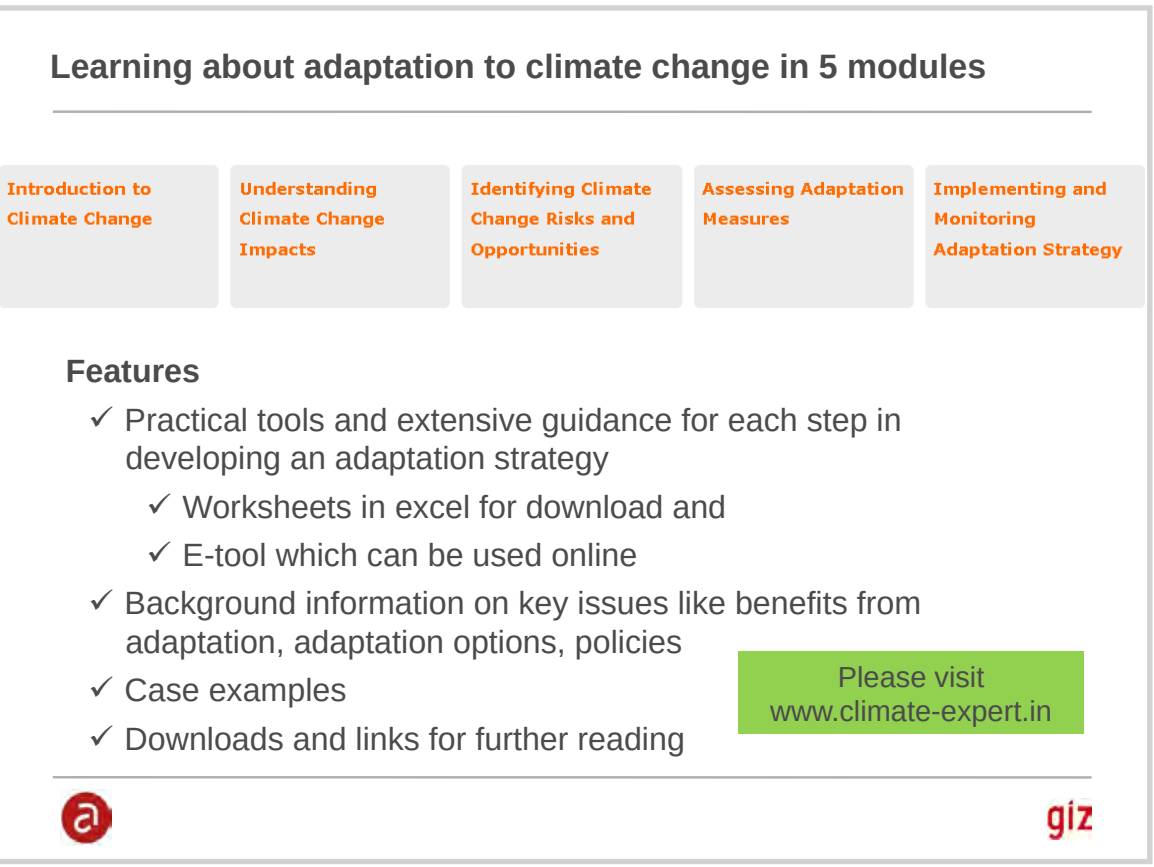
- Present the key questions for which the Climate Expert helps SMEs find answers.

Connect the training programme to the key questions of the Climate Expert:

- Which ones have been addressed in the training programme?
- Which ones have not yet been tackled?

For instance, in an awareness raising workshop your focus has probably been on understanding and identifying impacts, as well as getting first ideas on adaptation measures. The methodology for conducting assessments of risks, opportunities and adaptation measures has probably not been addressed. Companies can learn about these topics with the help of the Climate Expert.

Climate Expert website: *www.climate-expert.in*



- Present the five models and the key features of the Climate Expert e-learning programme.
- Invite participants to ask questions on the Climate Expert or any remaining questions on how to take forward the issue of CCA in their organisations.
- Distribute feedback forms to the participants and ask them to fill these in before leaving the room.

Hand-out "Feedback form"

Climate Expert website: *www.climate-expert.in*

4.3 Handouts

4.3.1 Example of a feedback form

Training Programme "Climate Change Adaptation – Preparing your business for the impacts of climate change"

[Date, location]

Evaluation

Dear participant,

We hope you enjoyed our training programme on climate change adaptation. Kindly share with us your views and ideas regarding the programme contents and organisation. Your valuable feedback will help us to further improve this course.

Thank you.

Please read the following statements and indicate your level of agreement by marking the appropriate box. You have six possible answers ranging from "totally disagree" to "totally agree". If you cannot answer or do not wish to, please tick the "no answer"-box.

1. Background

Which activities related to the topic of the training have you undertaken so far in your current organisation?	
What do you consider the major challenges with regard to the topic of the training?	

2. Content relevance and transfer possibilities

	Totally disagree			Totally agree	No answer
The topics and content of the training course are important for my work.	☐	☐	☐	☐	☐	☐
The content of the training course fully met my expectations.	☐	☐	☐	☐	☐	☐
I know how I can apply the course content in my work.	☐	☐	☐	☐	☐	☐
I know how I can pass on what I learnt to my colleagues.	☐	☐	☐	☐	☐	☐
I can also make good use of what I have learnt in other contexts.	☐	☐	☐	☐	☐	☐
The course has enabled me to continue working independently with the materials.	☐	☐	☐	☐	☐	☐
Would any topics have been useful that have not been covered?						

Are there any topics that have been covered that you consider less useful?	
How could the training be improved regarding any of the questions on content relevance and transfer possibilities above?	

Have you already got concrete ideas of how to apply what you have learnt? Yes ☐ No ☐

Please describe the initial steps you will take to implement your ideas:	
What support do you require in this process?	

3. Working and learning methods

	Totally disagree				Totally agree	No answer
The content and outcomes of the individual learning units were clear throughout.	☐	☐	☐	☐	☐	☐
Participants were able to bring their own experience and examples into the training course.	☐	☐	☐	☐	☐	☐
The material (e.g., presentation, hand-outs, etc.) helped me understand the content better.	☐	☐	☐	☐	☐	☐
The working and learning methods were appropriate to the tasks and suitably varied.	☐	☐	☐	☐	☐	☐
I could relate the case studies to the context of my own work and life.	☐	☐	☐	☐	☐	☐

How could the training be improved regarding any of the questions on methods above?	

The course was ... Too long ☐ Too short ☐ Just Right ☐

4. Trainer(s)

The trainer(s) obviously had considerable expertise in her/his own field and was well prepared.	☐	☐	☐	☐	☐	☐
The trainer(s) explained all specialist terms which they used or these were already familiar.	☐	☐	☐	☐	☐	☐
The trainer(s) listened to the participants and answered their questions.	☐	☐	☐	☐	☐	☐

5. Participants

The atmosphere among the participants was always cooperative.	☐	☐	☐	☐	☐	☐
I was able to benefit from the experience of other participants.	☐	☐	☐	☐	☐	☐
I will continue to exchange views on this subject with some of the other participants.	☐	☐	☐	☐	☐	☐

6. Achievement of objectives	Totally disagree			Totally agree	No answer
The training course has greatly enhanced my understanding of the topic.	☐	☐	☐	☐	☐
In concrete terms, the course has greatly enhanced my understanding of...					
…the scientific background of climate change and its impacts in India.	☐	☐	☐	☐	☐
…the impacts and risks of climate change for Indian SMEs.	☐	☐	☐	☐	☐
…the concept of climate change adaptation as opposed to mitigation.	☐	☐	☐	☐	☐
…the benefits and opportunities for SMEs of adapting to climate change.	☐	☐	☐	☐	☐
…potential adaptation measures.	☐	☐	☐	☐	☐
…the benefits and hurdles of a strategic approach towards adaptation.	☐	☐	☐	☐	☐
The course has provided me with the necessary practical tools to put the course content into action.	☐	☐	☐	☐	☐
In concrete terms, the course has provided me with the necessary practical tools to…					
…identify, assess and prioritise risks related to climate change for business.	☐	☐	☐	☐	☐
…identify, assess and prioritise new market opportunities in climate change adaptation.	☐	☐	☐	☐	☐
…identify, assess and prioritise adaptation measures for a company.	☐	☐	☐	☐	☐
Which competencies or expertise have you acquired in addition to the training course's explicit outcomes?					

7. Organisation	Very Unhappy			Very pleased	No answer
How happy are you with….					
...the overall organisation of the training course?	☐	☐	☐	☐	☐
...the venue?	☐	☐	☐	☐	☐
...the location?	☐	☐	☐	☐	☐
…the information you received in the run-up to the training course (e.g. organisational details, technical/professional information on the subject…)?	☐	☐	☐	☐	☐
What other information/ documents would you have needed as well?					

Since there are a lot of aspects a survey such as this cannot cover, we would ask you to add any comments or recommendations below that you might have for future training courses.

Thank you!

5 Case study on climate change adaptation – the example of "IndTex"

5.1 Overview of the module

Key Topic	This module introduces a case study on CCA of SMEs and its different potential uses in the training.
Objectives	• Deepen the understanding of participants on the impacts of climate change on Indian SMEs • Raise awareness on potential measures for adaptation to climate change by businesses • Build knowledge and skills of participants to assess and prioritise adaptation measures After completion of the module, participants • Have an in-depth understanding of potential climate change impacts on business and adaptation measures to address these risks • Know how to apply tools and criteria for assessing and prioritising risks and corresponding adaptation measures
Duration	As the case study can be flexibly integrated into the training programme, no overall duration of the module is indicated here. Time frames for individual sessions are indicated in the table at the end of this overview.
Methods	Presentation, moderated discussion, role play
Hand-outs	• Company profile "IndTex" • Role play descriptions for adaptation teams • Worksheet "List of measures for addressing risks"
Equipment	Projector, notebook, flipchart, marker pens, pin board, moderation cards

Session Schedule		
Time	**Topics of the module**	**Key material**
10 min	**Introducing "IndTex": Profile of the case company and the heat wave challenge** • Presentation of the company profile, processes and supply chain • Introduction to the challenge of heat waves	• Ppt slides 78-81 • Hand-out "Company profile 'IndTex'" • Case study description for the trainer, see training toolkit
35 min	**Impacts of heat waves on "IndTex"** • Discussion round: what could be impacts of heat waves on IndTex? • Impacts of heat waves on IndTex in seven impact areas • Discussion on how the case example relates to the experiences of the participants	• Ppt slides 83-85 • Case study description for the trainer, see training toolkit
65 min	**Adaptation measures of "IndTex"** • Role play "Developing adaptation measures for IndTex" • Presentation of key adaptation measures undertaken by IndTex in the seven impact areas	• Ppt slidews 87-99 • Hand-outs "Role play descriptions" for adaptation teams • Worksheet "List of measures for addressing risks, see Consultant's Manual Chapter 6.1

5.2 Trainer's reading

Objective and relevance of the module

This module presents a case study on CCA of SMEs and its different potential uses in the training. The case study is on a hypothetical company, the textile manufacturer "IndTex", located in Faridabad near Delhi. It is based on real-life experiences of textile and garment manufacturers in the region.

Using the specific climate change phenomenon "more frequent and more intense heat waves" as a challenge, the case study functions as a real-life example to reflect information and tools explained in the previous modules of the training, namely the impacts of a specific climate change challenge on a company and suitable adaptation measures for reducing risks and seizing opportunities.

Having such a real-life example available is important as climate change can appear to SMEs as quite a theoretical issue – and a global phenomenon materialising mostly in the future, with only minor relevance for the everyday running of a business. Through the case study you can make the potential impacts of climate change on Indian SMEs "real".

Similarly, the case study helps address doubts which many SMEs might initially have concerning the feasibility of developing adaptation strategies and measures, given their companies' limited resources. The case study helps in showcasing that adaptation is both feasible and beneficial for Indian SMEs.

A case study is thus a very effective way of connecting theory and practice of CCA in SMEs. This case of IndTex can be integrated at various points of the training programme. Grey boxes throughout Modules 2 and 3 have given hints in this regard.

Topics of this module, why they are chosen and how they are addressed

In the first part of the module basic information on the case company is provided and the challenge of heat waves is explained. Based on this information participants can identify impacts on the company and develop adaptation measures.

The second part of the module focuses on the impacts of heat waves on IndTex. Instructions for a moderated discussion are provided. This discussion can be used as a short exercise where participants brainstorm about the impacts of heat waves on IndTex. This allows them to reflect on climate change impacts on business and learn to apply the concept of impact areas in a company assessment. Detailed information is then provided on which key impacts IndTex has actually experienced in the seven impact areas. You can use this after the discussion or independently to illustrate climate change impacts on Indian SMEs.

The final part of the module looks at adaptation measures of IndTex. A role play exercise is introduced where participants can practice how to identify, assess and prioritise adaptation measures, using the tool "List of measures" provided in this training. Furthermore, the key measures are introduced which IndTex has actually chosen to implement for addressing risks and opportunities in the seven impact areas. Here again, you can use these slides after conducting the role play or independently as practical examples of adaptation measures.

Going through the case study will make participants realise that climate change is relevant not only in theory but also when it comes to real business activities and stakeholders. At the same time, participants will understand that climate change adaptation is a very complex issue and that they will have to adapt their company's strategy exactly to its specific needs and circumstances. By way of explaining tools through practical examples, participants learn how to apply newly gained skills to their own companies.

Important points to consider for effectively using the case study

The advantage of case studies is that they can be referred to whenever participants cannot or do not want to serve as examples during the training. This might be the case if participants come from very different backgrounds or represent competing companies hesitant to share information on the company, its vulnerability and adaptation measures. You should therefore plan ahead of the training in which discussions and exercises you want to use the participating companies as examples, and where the case study is better suited to fulfil this role.

The case study is more effective in connecting to the work reality of participants, the more the sector and business processes of the company match the participants' companies. It is therefore important to thoroughly analyse which sectors and business types your participants come from, and decide whether you want to adapt the case study to better relate to their context. Especially if the group of participants all come from one specific sector, it is worthwhile developing a case study for that particular sector and replacing the one proposed in this manual. Assistance for developing such as case study can be found in Box 3.

5.3 Slides for the presentation

5.3.1 Introducing "IndTex": Profile of the case company and the heat wave challenge

Ind Tex – An Indian textile manufacturer

Basic data of the company

- Apparel manufacturer for European and Canadian retailers
- Located in Faridabad cluster
- 200 employees, 7000.000 garments per month

Source: adelphi

Processes

- 5 process steps: cutting, stitching, finishing, washing and packaging
- Mostly manual labour; machinery for sewing, washing, packaging
- Energy supplied from the grid and own diesel generators
- Water supplied via pipes and ground water

Supply Chain

- Cotton yarn sourced from India, Pakistan and China
- Yarn dying takes place in Tirupur, Tamil Nadu
- Fabric processing in Ahmedabad, Gujarat

giz

If it is difficult for a large part of your group of participants to relate to this case study – because they are from a completely different industry sector or stage in the value chain and therefore face different climate change impacts – you can develop a different case study for this module. More detailed advice in this regard is provided in Box 3.

- Distribute the hand-out on the case company to participants.
- Present key facts about the company focussing on basic data, key processes and structure of the supply chain.

This information enables participants to identify climate change impacts and adaptation measures for IndTex. Do not present all aspects of the company profile, this will take too much time. The participants can refer back to their hand-outs if they need further information.

Hand-out "Company profile 'IndTex'"

Case study description provided in the training material

The challenge: Increasing frequency of heat waves

Heat wave: More than 5 days where daily maximum temperature exceeds the average by 5 °C

(average = in period 1961–1990; *source: WMO*)

Extreme temperatures have been rising notably in Delhi-NCR!

- 2001-2010 = Warmest decade over India ever recorded (= since 1901)
- 6 warmest years ever recorded occurred in that time frame
- 2010 was **warmest year on record** in North & Central India
  - Mean annual temperature almost 1°C above average
  - Mean temperature in pre-monsoon season almost 2°C above average *(source: IMD)*

Higher frequency and intensity of heat waves can be expected!

giz

Ask participants if they have noted these incidences of particular heat in the last decade; let them briefly describe the impacts felt.

- Introduce the definition of heat waves.
- Sum up key incidences of extreme heat already felt in the Delhi-NCR area where the case company is located.

Climate projections assume that the frequency and intensity of heat waves will further increase in the future.

This information introduces the "CC challenge" the case company has to deal with.

Presentation by Dash, S K, 2010: Weather in the changing atmosphere - Uncertainties and challenges: *http://www.cseindia.org/docs/IIT_Climate_change/S%20K%20Dash.pdf*

India Meteorological Department: Annual Climate summary 2010: *http://www.imdpune.gov.in/research/ncc/climatebulletin/annual%20summary%202010.pdf*

5.3.2 Impacts of heat waves on "IndTex"

What are the impacts of a heat wave on a textile business?

INDTEX

- Apparel manufacturer for European and Canadian retailers
- Located in Faridabad cluster
- 200 employees, 7000.000 garments per month

Heat wave: More than 5 days where daily maximum temperature exceeds the average by 5 °C

(average = in period 1961–1990; *source: WMO*)

What could be impacts on the company?

giz

- Ask participants about their ideas on which impacts heat waves have had on IndTex in the seven impact areas (location & buildings, processes etc.).

By starting out with this discussion question you can engage the participants in familiarising themselves with the case company and reflecting on potential impacts of CC. This exercise also helps participants apply concepts introduced before, such as the seven impact areas of climate change on business.

Participants will probably first think of impacts in the areas of production processes (power cuts, water shortages etc.) and employees (reduced productivity, health risks etc.). Ask them to think about impacts also in other areas, e.g., community or market.

The following slides show a list of impacts experienced by IndTex in each of the seven impact areas.

Also refer to the case study description provided in the training material.

Trainer's instructions for the following seven slides:

Depending on how you want to integrate the case study in your training, you can present the impacts in all areas or focus on one or a few impact areas. You can also use these slides in exercises on conducting a risk assessment and on developing adaptation measures based on the case study (see the following chapters).

If you use the case study to introduce potential climate change impacts in different impact areas, you can engage the participants by asking them "How have heat waves affected YOUR company? Do the examples from the case study match your experience?"

- Present the climate change impacts IndTex has experienced in the seven impact areas.

Case study description provided in the training material.

Impacts of heat waves on Ind Tex – Building and location

- Cracks in outside walls ↑
- Cracks in pavement on company premises ↑

Impacts of heat waves on Ind Tex – Processes

- Overheating of machinery ↑
- Gaps in water supply from groundwater ↑
- Gaps in water supply from grid ↑
- Cuts in power supply from grid ↑
- Dust incurrence ↑

giz

Impacts of heat waves on Ind Tex – Logistic and stock

- Volatility of cotton prices ↑
- Costs for energy, water, and labour inputs at suppliers ↑
- Production delays at suppliers with high water, energy and labour inputs ↑
- Heat stress for drivers ↑
- Road conditions ↓

giz

Impacts of heat waves on Ind Tex – Employees and community

Employees
- Alertness ↓
- Production speed ↓
- Cooling needs for rooms ↑
- Supply with drinking water ↑
- Health problems ↑

Communities
- Heat stress ↑
- Cuts in energy supply ↑
- Availability and quality of water ↓

Impacts of heat waves on Ind Tex – Government and regulation

- Stringency of standards for building insulation / ventilation ↑
- Government funded programmes, e.g., to support insulation or energy efficiency ↑
- Government funded loans with reduced interest rates, e.g., for better insulation ↑

Impacts of heat waves on Ind Tex – Market

- Consumer demand for very light clothing ↑
- Expectations of buyers to have very light clothing in product portfolio ↑
- Expectation of purchasers regarding protection of employees' health (e.g., prevention of heat related health issues) ↑

giz

Impacts of heat waves on Ind Tex – Finance

- Environmental, social and risk management expectations of investors and financial institutions ↑
- Availability of finance opportunities for investment in, e.g., insulation or energy efficiency ↑
- Capital base in case of non-adaptation ↓

giz

Discussion

How does the case study relate to your experience?

What have you learned from it?

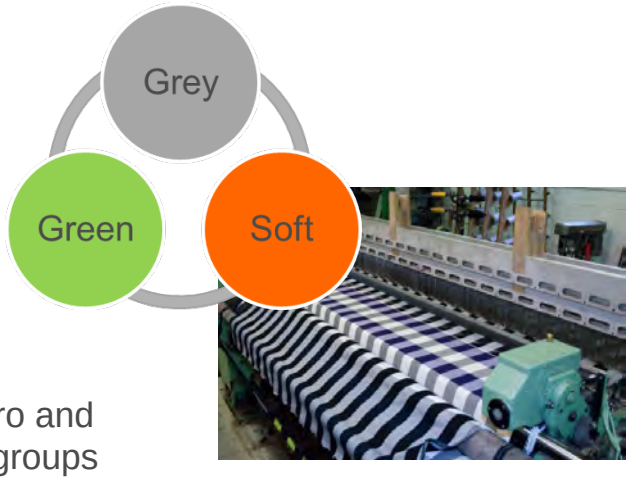
Source: adelphi

- Ask participants whether the case study matches their own experiences. Which of the impacts have they experienced as well? Which impacts have they experienced, but were not mentioned in the case study? Which impacts are not relevant to them?
- Discuss what can be learned from such a case study on climate change impacts.

Use this discussion slide if you presented the impacts on IndTex in one go before and now want to relate it to the participants' experiences.

5.3.3 Adaptation measures of "IndTex"

Role play – Developing adaptation measures for Ind Tex



Time frame:

- 5 minutes intro and formation of groups
- 25 minutes group work
- 15 minutes presentation of results

giz

Hand-outs for the role play have been developed for two adaptation teams and thus two impact areas (processes, logistics & stock). As teams should not have more than six members, you can create hand-outs for additional impact areas for these: take the existing hand-outs as template, select another impact area (e.g., employees), select one of the key impacts in this area for the exercise (e.g., reduced alertness due to heat stress) and develop the exercise description! Remember to extend the time frame for the "presentation of results" accordingly.

If you conducted the exercise "Identifying, assessing and prioritising risks from heat waves for 'IndTex'" before, you can use the key risks identified then for developing adaptation measures in this role play.

- **Introduce the exercise and form groups (5 minutes):** Explain the role play situation to participants and ask for a volunteer to take on the role of "Head of IndTex". Then ask the participants to form 2 groups, each representing the adaptation team for one specific impact area.
- **Participants work in their adaptation teams (25 minutes):** Adaptation teams identify, assess and prioritise adaptation measures for IndTex in the concerned impact area, using the worksheet "List of measures for addressing risks". They note down "priority A" measure(s) on red cards, "priority B" measures on yellow cards and "priority C" measures on green cards.
- **Teams present the results to the "Head of IndTex" (15 minutes):** The teams present their assessments to the Head of the company and give reasons why they have classified the selected measures as priority A, B or C. The company Head gives feedback on the evaluation and makes a decision on the measures to be undertaken.

	Time frame: 45 minutes The role play gives participants the opportunity to dive into a real-life situation similar to their work reality where they can learn to apply this part of the CCA methodology (identification and prioritisation of measures).
	Before the training familiarise yourself well with the exercise description and the tasks of the adaptation teams, as lined out in the hand-outs for participants and the instructions above. During the role play provide support by answering the teams' questions and, if required, providing hints or ideas on potential adaptation measures.
	• Moderation cards • Felt pens • Pin board
	• Role play descriptions for adaptation teams (includes exercise description, list of key impacts to develop measures for) • Worksheet "List of measures for addressing risks", see Excel file, spreadsheet "IIIa – Measures-Risk". In Chapter 6.1 of the Consultant's Manual you can find further explanations on how to use the worksheets.
	The following slides contain a selection of measures undertaken by the case company IndTex. Methodological hints for conducting role plays can be found in Section 6.3.3 of this manual.

Trainer's instructions for the following seven slides:

Ask participants to add ideas on adaptation measures which could help address the given climate change impacts on IndTex.

Encourage them to share adaptation measures which they have taken in their company to address similar challenges.

Present the adaptation measures IndTex has undertaken in the seven impact areas.

Note that the measures presented have been developed to respond to one key impact in the concerned impact area. Many of the suggested measures, however, also address other impacts.

"IndTex" adapts to heat waves – Building and location

- Cracks in pavement on company premises ↑

Regular monitoring of road conditions and early maintenance

Sunroof cover over main transport road

giz

"IndTex" adapts to heat waves – Processes

- Cuts in power supply from grid ↑

→ Replacement of bulbs by energy saving variants

→ New arrangement of machines to optimise air circulation (→ less cooling required)

→ Installation of solar panels at cluster level

giz

"IndTex" adapts to heat waves – Logistic and stock

- Production delays at suppliers with high water, energy and labour inputs ↑

→ Support suppliers in introducing water and energy efficiency measures

→ Diversify supplier base

giz

"IndTex" adapts to heat waves – Employees and community

Employees

•Alertness and production speed ↓

➡ Distribution of fresh water to employees every hour

Community

• Availability and quality of water ↓

➡ Joint construction of low-tech water filtration system in village

giz

"IndTex" adapts to heat waves – Government and regulation

• Government programmes supporting improvements of building insulation ↑

➡ Development of innovative concept for effective and cost-efficient insulation of machine room

➡ Regular monitoring of programmes and funding schemes

giz

"IndTex" adapts to heat waves – Market

- Consumer demand for very light clothing ↑

➡ Development of clothing line with climate active textiles

"IndTex" adapts to heat waves – Finance

- Environmental, social and risk management expectations of investors and financial institutions ↑

➡ Monitoring and reporting of CCA and CCM activities

5.4 Handouts

5.4.1 Company profile 'IndTex'

Location	Industrial cluster near Delhi, Haryana (NCR)
Employees	200
Products and clients	Simple apparel (women's, men's, children's), knitwear, decorated apparel Sold directly to European and Canadian retailers (including Next, FCUK)
Capacity	10 hour shifts, 7 days per week Up to 700,000 garments per month 70 days from design to delivery (approx. 15 days transport)
Technology level	Medium: Partially automated production processes Machinery used: 70 sewing machines (various types/functions), 15 ironing boards, 1 steamer, 1 packaging machine
Supply chain	**Upstream supply chain:** *Supplied material:* Ready-woven and printed fabric from cotton *Purchase of yarn:* Cotton yarn is purchased from a range of suppliers in India, Pakistan and China; the transport of the yarn to the dyeing units is conducted by ship and/or truck and is administered by the supplier companies. *Dyeing of woven yarn:* The cotton yarn is dyed in units based in Tirupur, Tamil Nadu; the transport to the fabric processing units is conducted by truck and is administered by the case company (duration: up to 15 days). *Fabric processing:* The processing of the woven yarn into fabric takes place in units in Ahmedabad, Gujarat; transport to the case company in Faridabad, Haryana is conducted by truck and is administered by the case company (duration: up to 8 days). *Management of upstream supply chain:* To ensure timely delivery and competitive pricing, the company has diversified its raw material suppliers in recent years, now sourcing from India, Pakistan and China. To ensure compliance with environmental standards, particularly regarding water use, effluent treatment and level of toxins in dyed apparel, the company has increased its control over the dyeing unit: the dyeing process is directly administered by the company. **Stock** *Storing of fabricated and packed garments:* The company has 1 general storage room and 1 small storage room with air-conditioning for special garments which cannot tolerate inside temperatures above 34°C (problem of stains from handling). **Downstream supply chain** *Transport within India:* The fabricated garments are transported to the warehouse at Delhi airport; transport is by truck and is administered by the case company. The cluster is located directly at the 2-lane asphalt main road taking to Delhi. Traffic jams are extremely frequent as Faridabad region has been booming as an industrial cluster in recent years, while the transport infrastructure was not extended to match this growth.

	Transport to export markets: The garments are shipped to destinations in Europe and Canada; inter-continental transport is by airplane and is administered by an export trading company.
Location and buildings	**Infrastructure at location** Inside the cluster, road quality is in most parts very poor; while few asphalt main roads exist, most lanes have a very uneven non-asphalt surface. The sewerage system frequently fails to capture the rains during monsoon periods. All units in the cluster are connected to the public electricity and water grid. No independent energy supply is provided at cluster level. **Factory buildings – outside and inside** The factory has two buildings: building A is a two-storey building with one fabrication room on each floor and one drying room for washed clothing. Here, the garment washing, stitching, finishing and packaging take place. Building B is a two-storey building hosting 6 office rooms and the two storage rooms. Facilities and premises are old, but sufficient to withstand common climate irregularities. The condition of buildings is controlled on an annual basis. The company has installed fans and a basic ventilation system to regulate inside temperatures. The smaller storage room reserved for delicate clothing is equipped with air conditioning to avoid handling stains. Two air-conditioned office rooms also exist.
Process chain	The process chain within the manufacturing plant involves five distinct steps: cutting, stitching, finishing (quality control, pre-finalisation), washing and packaging. All process steps are predominantly conducted using manual labour. For stitching, finishing and packaging, workers use sewing machines, ironing machines and packaging machines. Production is organized in process lines with relatively high efficiency.
Inputs	Electricity is used for running of all machinery, for lighting and for ventilation/air-conditioning. Electricity is supplied from a) the grid and b) a company-owned diesel-generator for covering shortages in the grid. Water is used for a) the washing of garments at two steps in the process chain: before starting the stitching and after finishing the garment, b) the plating of garments, c) the cleaning of facilities, and d) as drinking water for staff. Water is supplied via the `local water pipe system and via ground water. Polluted unusable water is coarsely treated and discharged.

5.4.2 Role play description – Group 1: Processes

Scenario

Your boss, the Head of IndTex, has realised how the impacts of climate change are starting to have severe impacts on the company. And he is convinced that the impacts are going to accelerate in the years to come; also, he is sure that timely adaptation not only helps to ensure the continuity of the business in the future, but also to gain competitive advantages.

As a first step in the adaptation strategy, the Head of IndTex wants to develop an adaptation plan for one key climate change challenge the company faces: **the increasing frequency and intensity of heat waves**. He has called on your team to suggest measures which are best suited to address the risks IndTex faces in the area of **processes.**

Impacts and resulting risks to address in the area of processes

While the impacts and resulting risks IndTex faces in the area of processes are manifold, one is among the most crucial:

More frequent **cuts in energy supply** during periods of extreme heat.

This impact leads to a number of negative consequences for the organization, including:

- More frequent use of the diesel generator, resulting in cost increases
- More frequent production stops, resulting in increased costs due to penalty fees and a loss in reputation among buyers

Now it's you turn: Which adaptation measures would you suggest to implement?

How to proceed in your team:

- **Collect** potential adaptation measures. In this phase, allow yourselves to be open and creative! In the next step, you can still exclude adaptation measures which are not sufficiently feasible.
- **Assess** measures according to the criteria listed in the "List of measures for reducing risks"
- **Prioritise** your measures by distinguishing three priority levels,
  A: Highly recommended
  B: Benefits could be further explored and/or measure can be taken up in the medium term (next 3-5 years)
  C: Measure not recommended at the moment; check again in 3-5 years
- **Prepare** your report to the Head of the company:
  Decide who will present your assessment to the Head of the company?

Prepare your arguments why you recommend these measures!

5.4.3 Role play description – Group 2: Logistics and stock

Scenario

Your boss, the Head of IndTex, has realised how the impacts of climate change are starting to have severe impacts on the company. And he is convinced that the impacts are going to accelerate in the years to come; also, he is sure that timely adaptation not only helps to ensure the continuity of the business in the future, but also to gain competitive advantages.

As a first step in the adaptation strategy, the Head of IndTex wants to develop an adaptation plan for one key climate change challenge the company faces: **the increasing frequency and intensity of heat waves**. He has called on your team to suggest measures which are best suited to address the risks IndTex faces in the area of **logistics and stock.**

Impacts and resulting risks to address in the area of logistics and stock

While the impacts and resulting risks IndTex faces in the area of logistics and stocks are manifold, one is among the most crucial:

More frequent interruptions in downstream supply chain as dying units face more frequent gaps in energy and water supply

This impact leads to a number of negative consequences for the organization, including:

- Delivery delays, resulting in increased costs due to penalty fees and a loss in reputation among buyers

Now it's you turn: Which adaptation measures would you suggest to implement?

How to proceed in your team

- **Collect** potential adaptation measures. In this phase, allow yourselves to be open and creative! In the next step, you can still exclude adaptation measures which are not sufficiently feasible.
- **Assess** measures according to the criteria listed in the assessment table
- **Prioritise** your measures by distinguishing three priority levels,
  A: Highly recommended
  B: Benefits could be further explored and/or measure can be taken up in the medium term (next 3-5 years)
  C: Measure not recommended at the moment; check again in 3-5 years
- **Prepare** your report to the Head of the company:
  Decide who will present your assessment to the Head of the company?

Prepare your arguments why you recommend these measures!

6 Training methodology: How to plan, implement and manage training programmes effectively for your target group

6.1 Introduction to training management and methodology

In this chapter, you are introduced to key considerations and tools for developing, implementing and improving effective and participant oriented training programmes.

Methodology is important for implementing trainings. As a training and capacity building organisation, surely you are familiar with many concepts already; however, as the efficiency and effectiveness of training depends on your training management skills, this is an important chapter of the Manual.

The central concept this chapter is based on is the training management cycle. The cycle allows training organisations to strategically plan, implement and manage their trainings. This training can be integrated into the training management cycle at different stages; while it is advisable to already discuss it in the regular strategy definition process, it can also be conducted as a pilot. After the pilot implementation, your training organisation should think about which changes would need to be made to best be able to integrate and promote it. Changes can affect the content and methodology as well as the overall training objectives and curriculum of your organisation.

Basic considerations on whether this is a suitable training for your organisation should include

- The fit of the training with your organisation in terms of target group and objective
- The skills and interest of your training staff and their development capacities
- The added value/business case your organisation can build from the training, e.g., consultancy services, new training customers, etc.

In the following sections, two types of information are provided: Sections 6.1, 6.2 and 6.3 contain methodological hints and recommendations for effectively planning, implementing, and evaluating individual training programmes. Section 6.4 introduces a comprehensive monitoring & evaluation (M&E) system as an integrated part of the training management cycle. This system encompasses the techniques of quality management introduced in the preceding sections, while going a step beyond by embedding these techniques in a comprehensive system of training quality management.

6.2 Preparing the training

In this section you are provided with hints and recommendations for the preparation phase of a training programme. This includes recommendations on organisational issues, training design and visualisation techniques.

6.2.1 Organisational issues

Venue, equipment and other considerations

Venue
In the selection of a venue, price, equipment and location are suggested as factors to consider. It is not necessary to have sophisticated equipment such as sound system etc. but rather to allow for a flexible training set-up with sufficient space.

Invitation
The invitation to participate in a training should be sent to the participants well ahead. It is advisable to have an internal as well as an external deadline for registration; the external deadline should be well ahead of the final planning date. This way, in case registration is low, more promotional efforts can be made; also, late-comers can still be served.

Leaflet and Programme
The invitation should be accompanied by a training leaflet, stating the objective and target group of the training as well as the learning opportunities offered. A rough agenda stating at least topics and timings should be included in the leaflet. A more detailed training programme, including the learning methodologies and names of trainers, should be provided best two days in advance, latest at the date of the training itself.

Room
As soon as the course dates and number of participants are known, the rooms need to be booked and the room set-up needs to be specified. Ideal is a personal visit to the training room of at least one of the trainers, to ensure the training room set-up is in accordance with the proposed training techniques. See also room set-up.

Equipment
Make a detailed list of equipment which you will need, and tick it off once arranged for. Important pieces of equipment are: projector, computer/laptop, extension cable with multiple plugs, moderation materials, flip chart / white board, and pens for flip chart / white board.

Breaks
Ideally, there is a separate time slot for breaks, where the participants are provided refreshments or have the opportunity to purchase them. For lunch either catering is provided by the organisers or the participants are informed where they can purchase lunch.

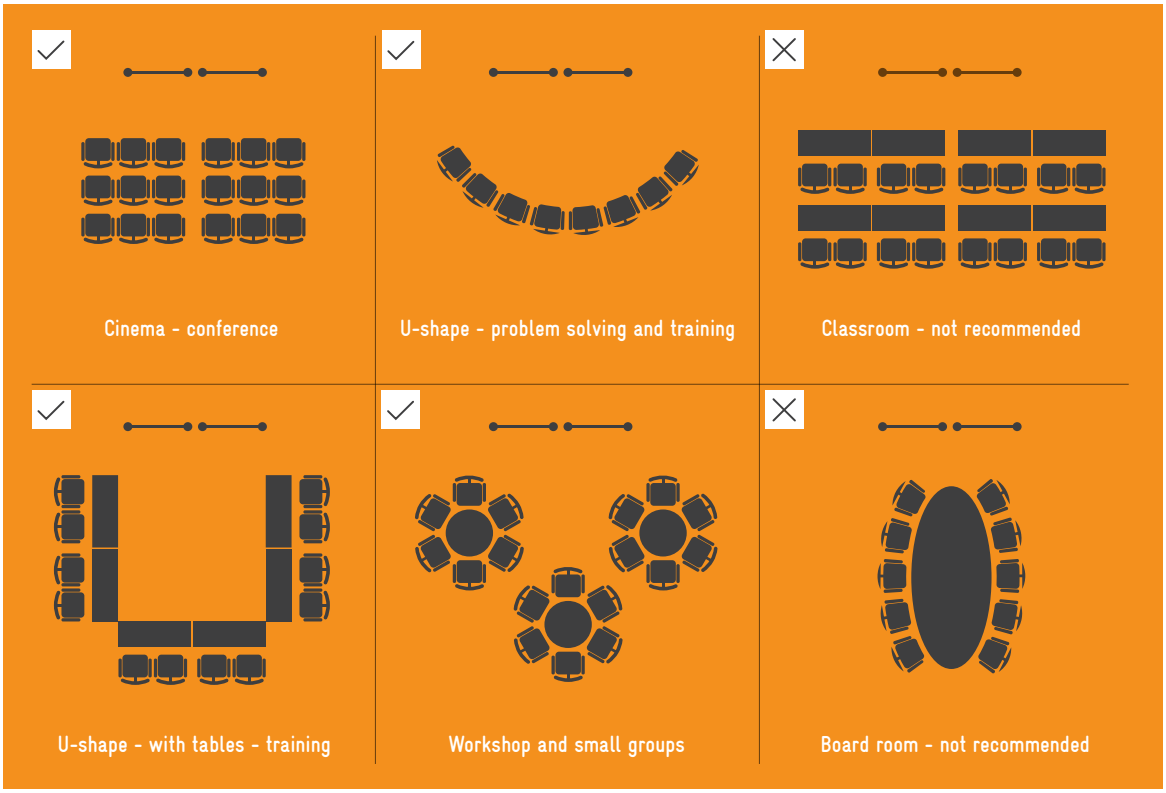
Sign posting
Mark the information how to get to the venue and the training room well, using sign posts in the venue to make finding the room easy for participants.

Name tags
Name tags should be prepared for all participants, if tables are used, name boards can be used on all the tables.

Materials
All participants should receive materials deemed necessary before the start of the course. However, avoid distributing too much material at the start; this might distract the participants from the first session of the training.

Participant list
Provide for a participant list and a sign-up sheet, where every participant can add or correct their contact details. All participants should receive this list after the training.

Room setup
The physical arrangement of the work room can strongly influence the effectiveness of group work and the level of participation. Just as there is no single right way to facilitate meetings, there is no right room arrangement that works for all meetings. However, as experts suggest, some room arrangements such as U-shapes and round tables foster participation, while others block participation, for instance cinema, classroom and board arrangement. Ideally, the room setup can be easily changed; in rooms with small and easily moveable tables the trainer can adjust the setting according to current needs.



6.2.2 Training design

Needs assessment among training participants

To ensure that your training programme is tailored to the needs of your participants, it is important to assess training needs in the run-up to the training (see pre-assessment, Section 6.4.4). For identifying your participants' needs, you must identify

- The status quo in terms of awareness and capacities in the topic area of your training
- The level of knowledge and skills potential participants would like to achieve through the training.

Knowing about the gap between those two – the status quo and the envisioned level of knowledge and skills – allows you to tailor the training approach and agenda to the needs of your participants.

Common ways for conducting the assessment of needs and expectations in the run-up of a training workshop are telephonic interviews with a selection of participants, or short questionnaires attached to the reply form for training enrolment. In case the workshop is conducted as an in-house programme within a company or organisation, the employer/staff member responsible of the training programme should be addressed first for the pre-assessment.

In planning the training, cultural, religious and gender characteristics of the prospective participants should be taken into consideration as well (see UNESCO, 2004). These factors may have a bearing on the success of the programme (for example, the type of food to be served). Furthermore, there should always be a balance between men and women in the training activities, both in terms of facilitators and participants. This process can promote gender equality.

Another type of needs assessment seeks to identify the training needs and interests in the topic areas of your work of your target group more generally. Under the heading of "demand assessment" this type of assessment is discussed in more detail in Section 6.4.4.

Definition of learning objectives

Once you have identified the needs and expectation of the target group, you define or adjust the overall learning objectives accordingly. Which needs will be addressed during the training course? If the objectives are clearly spelled out and communicated to the participants, these will be able to give you more concrete feedback on their learning achievements after completing the training course.

Setting up the training schedule

According to the learning objectives a detailed schedule is designed, spelling out which topics and training methods are used during the training. The schedule can be used as timeline for the training as well.

Timing of Sessions

People do not concentrate well for long periods of time. The length and design of a session has a strong effect on the participants' ability to learn. The more participatory and varied the activity, the longer the participants will be able to concentrate. When giving a presentation or a lecture, *maximum time should be 20 minutes.*

The time of day also has a big impact on how well people respond to different learning approaches. In the morning, people are generally more alert. After a meal, when stomachs are full, facilitators have to face what is called the "graveyard session". This is not the time for a long lecture! Remember that the average adult attention span is about forty-five minutes. This does not mean that you need a break every forty-five minutes, but you do need a change of activity. Breaks should be at least twenty minutes. Participants need this time to mentally regroup and to discuss issues that have arisen during the presentations.

Pace and Content of the Training

It is important to structure each session carefully. Structure sessions around the few key points that you think the participants must know by the end of the session.

Repetition reinforces memory. Although it may seem unnecessary, always repeat the central ideas or key points of a session and keep the most important points until last. (Reach Out: 2005)

Preparing the training material

A presentation which guides through and visualizes the training content is an effective means to support the learning process of your participants. For the design and effective use of power point presentations and flip charts, see next chapter.

To suport the learning process of participants even after the training, background material as well as hand-outs with reference lists and suggestions for further reading can be distributed. These allow participants to revise and deepen what they have learned in the workshop.

6.2.3 Visualization techniques

Visualization ensures that information stays in the minds of participants for a long time. The following visualization techniques will be explained in detail:

- Projectors and Power Point
- Flip chart
- Hand-outs

Projectors and PowerPoint

What?

Projectors and PowerPoint (Microsoft computer software for presentation using texts, graphs, pictures, etc.) are very popular in current training programmes. They can be used to visualize main points and present them in an attractive way. This will help to make the training sessions successful and interesting. PowerPoint slides can be easily used even for a large number of participants.

How?

Slides should focus on graphics, illustrations and plots rather than text. However, don't use too many flash graphics and animations because they might distract participant attention.

Do not pack slides too densely. Let your bullet points have around ten words or less. There should not be more than 2-6 lines of text per page/slide. The font has to be big enough so that participants sitting in far corners can still read the slides.

Highlight important words/sentences by underlining them, making them bold or using different typefaces, type sizes or colours. Overall, slides should be easy to see, informative and accurate.

Strengths	Limitations
• Slides help to visualize concepts and issues. • Crisp information and a good design help to get everyone's attention. • Slides can be used again and again.	• Presentations require time for preparation. • They depend on electricity. • They call for skilled facilitators.

Flipchart

What?

A flipchart is a board with large pieces of paper fixed to the top which can be turned over, used for writing down ideas or showing information to people. Flipcharts are used to reinforce your talk with visual material. By this they help to focus participants' attention on the topic.

How?

Look at the main training messages you wrote when you planned this particular participants' session. Assemble any relevant prepared flipcharts from your collection of training aids and put them in the correct story sequence. Are there any gaps?

If you need to create any additional flipcharts:

- Make a preliminary sketch on a small piece of paper
- Use only one or two essential words on each flipchart
- Try to standardise your use of images (e.g., rain cloud with raindrops)
- Keep the pictures simple - do not add too much detail

When you have decided on the final design:

- Use a large sheet of paper
- Leave a blank border of 2 cm around the edge of the paper
- Leave a top margin of 5 cm so that the flipcharts can be bound together
- Use a thick felt-tip marker pen
- Write words clearly and level
- Be careful that the ink does not stain through the top sheet onto the one below

When using the flipchart, make sure that:

- Everyone can see the flipchart
- You speak to your audience, not to the flipchart
- You do not stand next to your flipchart all the time, but move around to interact with your audience
- You vary your presentation by using the flipcharts in different ways:
  - Conceal parts of the picture with blank paper. Then remove them during your talk to complete the picture
  - Get participants to come forward and pin parts of the picture onto the flipchart
  - Use prepared transparent overlays to change pictures
  - Use a blank transparent overlay to write on participants' responses (by using the overlay you can reuse the original flipchart later on)

Strengths	Limitations
• Can be used when you do not have access to visualisation aids such as projector and PowerPoint slides. • Can be completed and enhanced during class, encouraging process of joint thinking and idea development.	• The size of audience is limited, as everyone needs to be able to see clearly the writing on the flipchart.

Hand-outs

What?

A hand-out is a circular of information which the trainer distributes to all participants. It summarizes and clearly lists the most important aspects of the training contents. It may contain additional information which the participants can read later on. Hand-outs should be used in addition to slides or flip charts.

How?

- Don't just print out your slides. Use neither very simple bullet points (later on people will forget what the context around those bullet points was) nor whole sentences. Instead, type down the text you have used as notes for the presentation.
- Ensure your hand-out reflects your presentation. Your hand-out should have the same title as your presentation and should follow the same structure so that audience members can easily find the information they want.
- Add more information. Presentations are not a good format for transferring a lot of information. However, they are good for inspiring people to find out more about a topic. That extra information can be in the hand-out.
- Include references – participants are thankful for knowing what to read or research if they are particularly interested in one topic.
- Make your hand-out stand-alone. The hand-out may be passed onto people who were not at your presentation. Or an audience member may look at it a year from now when they've forgotten most of your presentation. Make sure that it will make sense to them.
- Provide white space. Some people like to take notes during a presentation. Help them to keep all the information related to your presentation in one place.
- Make your hand-out look professional. Have someone proofread it. Create a consistent look and feel with your brand (this may include a logo and colours).
- Distribute the hand-out at the beginning or at the end of your presentation. Since there is no scientific conclusion about which point in time is the most effective, just ask the participants what they would prefer. (source: Mitchell)

Strengths	Limitations
• Reduces the amount of note taking necessary and covers basic factual information. • Effective means of revision and a guide for further learning.	• Difficult for the trainer to point to certain aspects, illustrations, etc. • Often used in combination with slides/flip chart – increased work load during preparation phase.

6.3 Conducting the training

The following paragraphs provide information and guidance on how to conduct trainings effectively. They cover four key topics in this regard, i.e. basic training principles for adult learners, steps and techniques for the introduction phase of trainings, participatory training methods as well as guidance and tools for giving and receiving feedback.

6.3.1 Training principles

It is estimated that adults learn:	
10 %	of what they read,
20 %	of what they hear,
30 %	of what they see,
40 %	of what they see and hear,
50 %	of what they discuss,
70 %	of what they experience,
90 %	of what they teach.

Source: United Nations, 2001

From these insights we can deduce a number of principles for successful training:

Work towards "AURA":

- A ttention to what you are saying
- U nderstanding of the contents
- R etention of what is understood
- A pplication of learned results

Adults learn by doing.

- Act as a facilitator and get people to throw their hands on the task.

Use realistic and relevant examples.

- The whole idea of training is for the learners to achieve more at the end of the day. So use examples that they can relate to. Adults relate their learning to what they already know.

Don't abuse the attention span.

- Long periods of talk, without opportunities for participation, are likely to be ineffective as a method of training.

Give and take feedback.

- Your feedback enables participants to make any necessary changes in their learning plan – incorporate the positive, even if you mostly have to criticize. Encourage participants to articulate their concerns – learn what they need and then teach them accordingly. For further information see Chapter 4 and 6.3.4.

Use and stimulate the senses.

- Alter the tone and pace during the course of training. Use different teaching methods and types of visualization. For further information see Chapter 6.2.3.

Conduct the training in a comfortable environment.

- Make the training session a friendly learning environment. The last thing learners want to go through is a rigid session of teaching. Include simple social activities or get-together session.

Inform learners of the learning objectives.

- Establishment of clear objectives is the key to a successful training. It is necessary that the learners are kept on track throughout the training session. In order to do this it is essential that they are reminded of the learning path.

Practice makes perfect.

- Competency and mastery largely result from practice. Creative delivery modes and repetition are the ways to go about reinforcing this principle.

Guide and prompt; do not tell.

- Provide all the help learners need – giving examples, demonstrations, using multimodality approach etc., prompt them and encourage them to give you the answer you are looking for.

6.3.2 Introduction and definition of objectives

Taking sufficient time for the introduction of a training programme is a key building block of successful training. Starting strong will keep participants engaged throughout the training programme.

Welcome participants and self-introduction

It is important to acknowledge participants as they arrive and be available for questions. Name badges or name boards can be handed out as participants arrive. Introduce yourself and encourage small talk with participants to engage them early. Find out if they have prior knowledge of the subject, their reason for attending, what they hope to take away from the training, how they heard about the training etc.

When the class begins, introduce yourself and give a brief overview of your background, noting your level of expertise on the subject matter. Build your credibility right from the beginning by introducing yourself (see Rose, 2008).

Participant introduction

Invite participants to introduce themselves and give a brief synopsis of their background. This way, participants can arrive in the group and familiarise with each other. Some examples for warm up activities are:

"Four corners of me"

Fold sheets of full-size white paper into four sections. Give a folded sheet and a pen to each participant. Ask them to write down/draw the following information (can be adapted):

- Upper left section: job, title and organization
- Upper right section: two of their skills which they feel can enhance the success of the training.
- Lower left section: favourite foods and hobbies
- Lower right section: any symbol or picture that you feel describes your life-style (Example: open sky, symbol of openness, being open-minded)
- On completion of the exercise, ask participants to present. Each person will be allowed 2-3 minutes for his or her presentation.

Introducing your neighbour

- Ask participants to introduce their direct neighbour (either left or right)
- Hand out moderation cards and explain that they have 5 min time to collect the following information on the other person on cards: name; organization and position; relevant skills and experiences (can be adapted as required)
- Each couple has 1 minute time to present each other to the group
- Once presentation is finished, they are asked to pin their cards to a board/wall
- Cards may remain on the wall for the rest of the seminar to give participants the opportunity to look up the information

Bingo

- Distribute Bingo sheets (as prepared below) to all participants.
- Ask each participant to go to another participant to see if he/she can respond with a "yes" to the items in the boxes on the sheet.
- If "yes", the other participant must sign his/her name in the appropriate box.
- Have each participant do the same with all the others. The participant who gets signatures in all the boxes has to announce the names of the people from whom he/she obtained signatures and will be declared the winner.

Example of a Bingo Sheet:

Have three children or more	Like romantic movies	Enjoy travel
Enjoy spicy food	Like bananas	Like swimming
Check e - mail at least once a day	Had hair cut within two weeks	Like to sing
Like rainy days	Believe in horoscopes	Like yellow rather than red

Note: For the points in Bingo, it is better to include items which participants cannot figure out without communication with other participants, rather than physical features (e.g., has a moustache, has black hair, is tall).

Levelling of expectations

By finding out about everyone's expectations you give the participants confidence in the training and on the other hand gain an overview about the needs of the participants.

You can ask participants to express their expectations during the introduction phase (e.g. by asking participants to write down 2-4 expectations in one section of "Four corners of me")

Another way of levelling expectations is the following activity:

Expectation clusters

Before the training:

- Write the following questions on cardboard cards:
  - What do I expect from the training in terms of knowledge building? (colour 1)
  - What do I expect from the trainer(s)? (colour 2)
  - What do I personally contribute to make the training successful? (colour 3)

During the training:

- Fix the cards on the board while reading the questions out loud.
- Distribute cardboard cards of 3 different colours according to the scheme you have chosen and invite participants to write down their expectations. They get 15 minutes time for that task.
- Collect the answers and cluster them around the subject.
- Then read the answers per cluster and eventually ask for clarification.

Introduce the Training Outline

Provide a snap shot of what will be covered in the course or workshop including the learning goals, timeline, activities, assignments and other pertinent information to the participants. Point out where and how participants' expectations fit to the training outline. If you have prepared different options, adjust the training outline according to the participants' expectations.

6.3.3 Participatory training methods

The most common way of passing on knowledge is to hold a lecture in front of an audience. However, it is by far not the most effective one. Participatory training methods are a more active, inclusive and creative way of training. By engaging participants in problem solving, learning effects are likely to become much stronger.

In this section, the following examples of effective participatory training methods are introduced:

- Question and answer session
- Brainstorming and mind maps
- Moderated discussion
- Small group discussion
- Debate
- Case study
- Role play
- Group work
- Storytelling

Of course this list is far from exhaustive. Other interesting participatory training methods are, for instance, quizzes, field trips or other types of discussions. Please refer to the recommended titles in Chapter 7 for further information.

Question and answer session

What?

One key component of participatory training is for the trainer to use questions as a means of eliciting response from participants before expressing own opinions or starting delivery of information. Question and answer sessions serve to gather ideas and information, to assess learning progress, and to stimulate reflection and action.

Types of questions are:

- *Predetermined questions:* Questions are directed at a specific person determined in advance.
- *General questions:* Questions are not aimed at any particular person; anybody can answer.
- *Closed:* The questions have to be answered with Yes or No.
- *Open-ended:* The questions have to be answered with some detail or elaboration.

Good questions are questions that:

- Are open and allow for complex answers (yes/no answers are not possible)
- Are clear enough for everyone to understand
- Do not provide their own answers

How?

- Introduce the topic to the participants.
- Use a variety of types of question one after another.
- Respond to the answers by:
  - Acknowledging the answer
  - Summarizing the answer
  - Recording the answer
  - Letting somebody else summarize the answer
  - Dividing the answer into several components and asking for someone to express his or her views about each
- Tips for handling answers:
  - *Incomplete answers:* Acknowledge the answer. Then continue to collect answers. Allow the incomplete answer to be completed or modified by other participants.

- *Vague answers:* Acknowledge. Assist the participant in formulating his/her reply by summarizing or asking direct questions. Allow other participants to state the answer more precisely.
- *Answers that are not pertinent to the question:* Acknowledge. Point out that the answer belongs to a different field. Repeat the question more precisely or rephrase it. Give the participant the opportunity to reply again or allow the group to reply.
- *When the correct answer comes too quickly:* These are usually "expert answers". Acknowledge and record. Allow other participants to ask questions or make statements regarding the expert's reply. Include the expert extensively in the discussion of the topic or change the topic so that additional aspects can be included.
- *No answer:* Give participants ample time to think about the question. Verify that everyone has understood the question. Rephrase the question. Break down overly difficult questions into step-by-step questions.

Strengths	Limitations
• This technique helps reveal the experiences of group members. • It increases comprehension, interest and attention among the participants. • It helps explain and clarify the opinions expressed. • It increases the self-confidence of the participants.	• Participants may divert the discussion to another topic. • Participants may feel embarrassed at having to answer direct questions.

Brainstorming and mind maps

What?

The idea of brainstorming is to collect as many ideas a possible on a given topic in a short time. All participants are encouraged to let their brains "storm" and to share their ideas with others.

How?

Core rules which have to be observed by all the participants:

- All ideas are valid, criticism and discussion are not allowed until all ideas have been collected
- All ideas are welcome, even if they seem wild and unconventional
- Quantity is the objective, the more the better
- Already existing ideas can be the seed for new ideas

Mind map

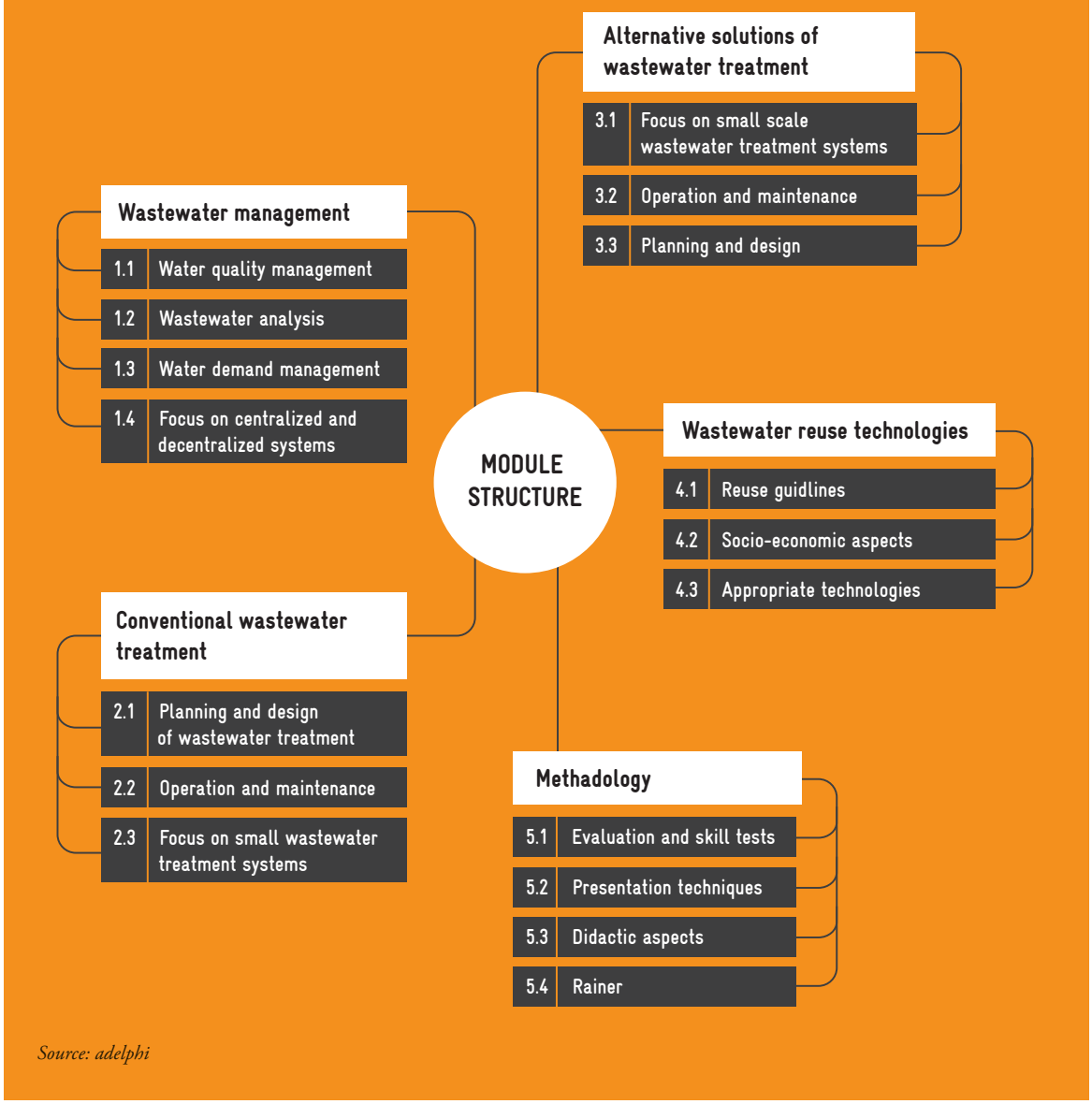
To structure the results of a brainstorming session it can be useful to create a mind map. This method creates a structure with the ideas generated.

- Write topic or idea in the centre of the page, and draw a circle around it.
- Then all related issues and relevant information is written outward from the centre in all directions. The concepts are connected with lines. The mind map can grow in every direction at the same time

Key principles for drawing a mind map are:

- Use single words or simple phrases - key points for information help you to keep an overview.
- Print words - joined up or indistinct writing can be more difficult to read.
- Use colours, symbols and images
- Use cross-linkages - information in one part of the Mind Map may relate to another part. This helps you to see how one part of the subject affects another.

Part of an Example Mind Map



Source: adelphi

Strengths	Limitations
• Everyone can participate. • It takes little time. • More ideas are generated. • It gives the facilitator some idea about the experiences of the group.	• If there are many ideas, it takes a lot of time to write them down. • There is the possibility of inconsistent ideas being generated if the participants don't have any prior exposure to the subject. • Some ideas may be vague because of the lack of analysis. • At times this method may lead to disorder or chaos.

Moderated Discussion

What?

In general, a discussion is an oral exploration of a topic, object, concept or experience. Each participant presents his/her opinions, findings or conclusions and takes a critical look at those of the other group members. The discussion can result in a consensus or a clear comparison of differing points of view.

Discussions provide opportunities for students to clarify and expand their ideas and those of others and promote positive group interaction and conversation. Through discussion, students should achieve a deeper understanding of the topic.

Moderated discussions are led by the trainer and held within the whole group of participants.

How?

Guided Discussions:

- Guided discussions consist of teacher-posed questions that promote the exploration of a particular theme, topic or issue.
- When leading a discussion, you should:
  - Play a neutral role
  - Structure the discussion by summarizing and asking follow-up questions
  - Ensure that everyone participates equally

Open-ended Discussion:

- Open-ended discussions begin with a sincere question (to which there is no single correct or concise answer) posed by teacher or student.
- All listeners consider the question and answer according to their opinion.
- You should incorporate pauses after students' responses to encourage extended or different responses.
- Students should be encouraged to facilitate discussions by continuing to formulate and pose questions appropriate to the topic of study.
- Establish student-student dialogues during the discussion whenever possible.
- Respect students' questions and their responses.
- Model the role of sensitive listener, collaborator, mediator, prompter, learning partner and questioner.

Strengths	Limitations
• Participants have to reflect upon their own opinions and come up with arguments to support them. • Participants get to know a wide variety of viewpoints and approaches to problem solving. • All participants can take part. • The trainer takes part in the discussion and can make sure that it stays relevant to the training content and that everyone participates.	• Dominant or rhetorically skilled participants can try to monopolize the discussion. • Participants can try to shift the discussion focus to topics which are irrelevant to the training content. • Participants can become emotional and prevent the group from reaching rational results.

Small group discussion

What?

Small group discussions are held in sub-groups of participants. The trainer does not moderate the discussion but only initially explains what the discussion topics and objectives are.

How?

At the beginning of the discussion:

- Describe in detail the objectives of the group discussion.
- Divide the participants into small groups (appropriate number of members per group: up to 8 persons)
- Tell each group to nominate a rapporteur for presenting the group findings in the plenary and a chairperson for moderating the discussion.
- Tell group members how much time they have for discussion.

During the discussion:

- Move around and observe each group at work.
- Ensure everybody's participation.
- Extend help if required.

At the end of the discussion:

- Ask the rapporteurs from each group to present their group findings.
- Create opportunities for discussing the presentations of other groups.
- Summarize the presentations.

Strengths	Limitations
• Participants have to reflect upon their own opinions and come up with arguments to support them. • Participants get detailed knowledge on viewpoints and approaches to problem solving of their group members • All participants can take part. Quiet participants are more likely to engage in the discussion.	• Dominant participants can monopolize the discussion. • Discussion focus can shift to irrelevant topics or to personal chatting. • The trainer has little influence on development and success of the discussion.

Debate

What?

Debates make it possible to introduce a topic and to shed light on contrary issues related to it. Ideas and new practices are passed on from an expert or a small group to the majority.

How?

- Explain the topic and phrase the subject as a statement, not a question, and make sure that two points of view are possible. For example: "Climate change adaptation requires a bottom-up approach"
- Select the two speakers beforehand and discuss separately with each the points you will want them to make; make sure that participants discuss ideas objectively

- You should act as moderator and explain the statement to the group. Set a time for each speaker (say 5 minutes) and don't let them over-run. Also, don't allow any interruptions
- After the main speakers, allow other participants to make comments of up to one minute each
- You should then summarise what has been said on both sides; you may want to make notes of the main discussion points on a flipchart already during the discussion
- Optional: Take a vote on the subject from the group as a whole

Strengths	Limitations
• Participants gain in-depth knowledge on both sides of the topic. This develops understanding of, and empathy for, opposing viewpoints. • Participants have to reflect upon their own opinions and come up with arguments to support them. Choices can be made more rationally.	• Only a small number of participants are actively engaged. • Debaters may feel unhappy with the point of view they have to represent. • The debate can get heated and deteriorate into an argument. Respectful listening to the opponent's side is no longer possible. • Debate preparation takes the debaters more time than other participants

Case study

What?

A case study is a detailed description of events that either really happened or are products of the imagination. Its purpose is to take the participants closer to the real context of a situation or problem. A case study can be used to analyse a problem and to identify its causes and solutions based on the experiences of the participants. Case studies can also draw comparisons between ideal and real-life conditions.

How?

Before the training:

- Select the topic or theme with reference to participants' own experiences if possible.
- Decide upon the type of case and presentation.
- Prepare questions or instructions to help participants investigate and understand important aspects of the case.

During the case study:

- Give the case to small groups or individuals for analysis.
- Provide necessary assistance to guide the analysis in the proper direction.
- Ask participants to write down their findings on a chart.

At the end of the case study:

- Ask each group or individual to state their findings.
- After listening to the views of one group/individual, let another present theirs.
- Lead the discussion in terms of the learning objectives of the training course.
- If applicable, present real case outcome of case.

Strengths	Limitations
• The case study is a simple way to get a proper understanding of a situation and to find the solutions to its problems. • Participants improve their ability to analyse. • It creates enthusiasm and interest among the participants. • It brings real life into the classroom.	• Selecting a useful case can be difficult and time-consuming. • The wrong case can lead to wrong impressions in the minds of the participants. • If the participants feel that the case is not realistic, their enthusiasm may diminish.

Role play

What?

Role play is a structured activity, usually in the form of a dramatic performance that recreates a situation from real life. The participants in a training programme take part in the role-play and act out a situation for the purpose of further analysis and discussion.

Role play can be used to analyse a problem and to identify its causes and solutions. It is also useful for making comparisons between ideal and real-life conditions.

To reduce preparation time and avoid observer boredom, a role play exercise should not be too long. The "script" or scenario should be prepared with a clear focus on the selected topic or theme.

How?

Before the training:

- Select the topic or theme.
- Identify the key points to be depicted.
- Identify the roles to be played in light of these key points.
- Prepare role play conversations for the performers; develop materials, if required.

During the role-play:

- Select performers and observers among the participants.
- Provide role play conversations to all the performers and obtain their reactions, comments and suggestions.
- Ask performers to prepare for the performance.
- Ask the observers (other participants) to observe the role-play for the purpose of taking part in the discussion afterward.
- Introduce the participants to the role play exercise and its purpose.
- Help the performers to act out their parts if needed.

After the role-play

- Ask observers to express what they learned from the performance.
- Ask performers to express their opinions regarding the performance.
- Ask questions based on the theme of the performance and encourage discussion.
- Summarize the findings of the discussion.

Strengths	Limitations
• Role play can increase self-perception and enhance the ability to identify real-life problems. • A successful role-play leaves observers with the feeling of having seen "the real thing." • Participants may be easily motivated to take part.	• Preparation takes considerable time. • If the role play is not executed properly, participants may not take it seriously. • Self-conscious or quiet participants may not want to take part in the role play. • The impact of the role play upon the participants depends on the capacity of the performers. • Evaluation is difficult.

Group Work

What?

For group work participants are divided into small groups. Each group is assigned a precise task which they have to tackle (mostly) independently. Results are collected and discussed with the entire class. Group work is used when the entire group is too large for problem solving and practical training.

How?

- Explain the objectives and tasks of the group work. Clarify all questions.
- Assign tasks and participants to groups. Group members should represent a good mixture of skills, hierarchical levels, nationalities, etc. You can give each group a different task or have all groups work on the same task.
- Assign roles to group members or ask students to do this by themselves. Important roles can be discussion leader, reporter, visualizer, note taker and process observer. Not all of these roles must be filled, especially not in very small groups.
- Let the groups work on solving their tasks. Remind groups to keep the time limit. Help groups that are far behind.
- Ask each group to present their results.
- Let students ask questions or start discussions on the results of other groups so that they gain maximum understanding of all topics.

Strengths	Limitations
• Group member exchange view points and learn from each other. • Participants learn to analyse problems and work self-responsibly. • Participants gain in-depth knowledge on certain topics. • Participants get to know each other better and can communicate effectively • Even specialized problems can be tackled. • Overall results are attained faster.	• Danger that groups will commit themselves to wrong solutions. • Group solidarity can lead to competitive behaviour in the large group.

Storytelling

What?

Storytelling is the recital of an event or a series of events which can be either true or fictitious. This tool can be especially effective in cultures that have a rich oral tradition.

How?

There are different forms of story-telling:

- *Sharing Stories*

Ask participants to reflect upon a specific topic, and share stories about that topic from their own personal experience. This may contribute to participants' motivation to deeply engage with a particular topic, as they will be grounded in their own experiences and memories.

- *Critical incidents*

Tell or read a story to the group, and then lead a discussion about the issues raised in the story. You might use an existing parable or local story, or create a story to illustrate the topic you want to address.

- *Finish the Story*

Begin a story, and ask participants to add a line or two. This works best in a smaller group, and can even be used as a quick and fun warm-up.

Strengths	Limitations
• By relating theory to real life experiences and to powerful images students are more likely to remember the facts.	• Participants may find stories too subjective, irrelevant or childish to take them seriously. • Participants can get too emotional when talking about experiences and memories.

6.3.4 Providing and gathering feedback

Functions, types and outcomes of feedback

Feedback is communication with a person (group) that gives that person information about how he/she affects others or about his/her learning progress. Feedback helps an individual stay "on target" and thus better achieves a goal or purpose. Feedback helps another person to consider changing their behaviour or altering a message.

Effective feedback is usually descriptive rather than judgmental. Feedback can come through a formal critique or from informal reactions.

Feedback can help you:

- Keep the conversation personally relevant to the listener.
- Engage the listener in the communication process. His mind and will are more likely to be engaged in reasoning through personal implications.
- Know if the listener has heard you say and understood what you meant him to hear.

There are several different types of feedback:

- *Positive feedback:* is designed to encourage a response and is formulated in a positive way.
- *Negative feedback:* is designed to discourage a response (example: an annoying buzzer).

- *Neutral feedback:* is designed to show the person that you understand him or her. Neither encourages or discourages responses.
- *Informative feedback:* displays the correct answer and is most useful for getting information about the topic of interest.
- *Cumulative feedback:* sums individual performances.

Feedback has its typical outcomes:

- Behaviour repetition (for example positive feedback, informative feedback, cumulative feedback),
- Behaviour change (negative feedback, informative feedback), little response (for example neutral feedback) and
- Contempt (negative feedback).

Ways of providing feedback

Ideally feedback should be and gathered from participants both informally and formally.

- Informal feedback to participants should be frequent and occur in situations where specific behaviours or skills can be discussed in small doses either at the time or shortly after.
- Formal feedback to participants will be most commonly given at an appraisal interview, but on occasions an additional planned feedback session may be required. For providing a formal feedback you should:
  - ensure the trainee knows they are to receive feedback
  - collect relevant data from others
  - make notes prior to the meeting
  - reinforce good practice with specific examples

Tips for providing feedback:

- Feedback must be specific rather than general. Specific feedback objectively describes another person's message, behaviour, or situation and addresses specific action not generalisations. For example, not "Your analysis of the data is not always good" but rather "What was your reasoning behind that particular decision?"
- Feedback must describe the person's own feelings. For example: "I have the feeling you are unsure of yourself when you read".
- Feedback must be directed toward something the receiver can do to change the situation.
- Feedback must avoid evaluative language, such as 'you are wrong or you are lying'.
- Feedback must be focused on actions rather than personality, e.g. "you lost eye contact with the patient" rather than "you're far too shy with patients".
- Feedback must take into account the needs of both the giver and the receiver.
- Feedback must be based on first-hand data, i.e. the person who observes the performance. Second or third-hand feedback, e.g. "Dr X says that you are…" often passes as feedback but it is never as powerful as first-hand data.
- Positive feedback must be given first followed by the negative feedback e.g. "your plan has some positive aspects…, but this aspect needs more..."

Gathering feedback from participants

To assess the suitability and efficiency and increase the effectiveness of the training further, it is very important to collect and analyse feedback from participants. Especially at early stages of implementing this training gathering extensive feedback is important, as SMEs' preferences are varied and sometimes different approaches need to be tested and improved.

The feedback should be gathered from participants both orally during the training and in written format. Extensive oral feedback is gathered in the last session of the training, but trainers can also use breaks during the training as well as informal discussions after the training to learn about participants' views on the training.

In order to collect feedback in a more structured, transparent and comprehensive way you can use a written (and anonymous) questionnaire. This questionnaire should comprise questions about…

- Content relevance
- Working and learning methods
- Achievement of expectations and objectives
- Trainers
- Participants
- Organisation
- Transfer possibilities
- Background of participants and their companies

You find an exemplary training questionnaire in Chapter 4.3.1 of this manual. The questionnaire and a form for evaluating the feedback are also provided as electronic Excel files in the trainer's package. The evaluation sheet serves to compile and evaluate all information gathered through the questionnaires. As the questionnaire consists both of open and closed questions, results need to be evaluated both qualitatively and quantitatively.

This structured evaluation allows for a continuous improvement of training programmes. It also enables you to effectively support participants even after the training if you notice particular support needs. For instance, if you notice that trainees lack ideas to transfer their knowledge into practice, you can offer an online tutorial or send suggestions via email.

6.4 The M&E system as key tool for quality management of trainings

Monitoring and Evaluation (M&E) are the building blocks of a comprehensive system for quality control and management of trainings. The M&E system is part of a full training management cycle and assesses the suitability, efficiency and effectiveness of trainings. Improvements to the training portfolio, content and methodology can be made according to this information.

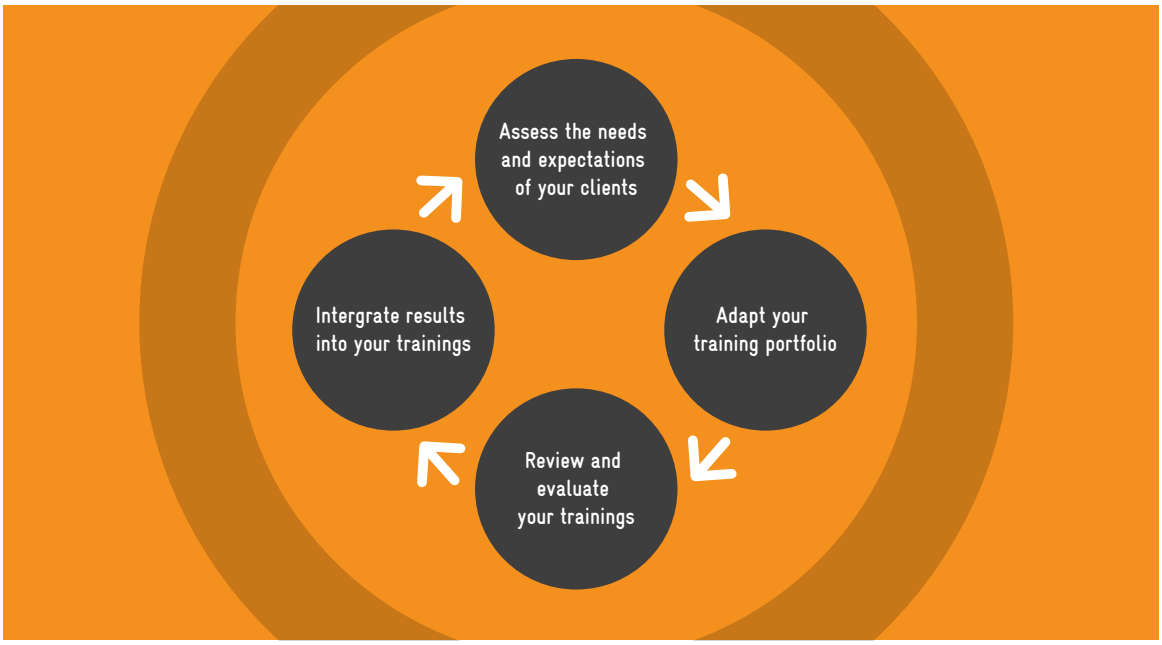
6.4.1 Definitions, goals and basic principles of M&E

An effective M&E system for trainings provides a continuous opportunity to validate the content and methodology of your training portfolio. Integrated into your training management cycle, it offers introspection and promotes improvements at regular predetermined points of time.

Training monitoring comprises the gathering, recording and analysis of information and uses the results to inform the training management about urgent matters.

Evaluation complements monitoring by providing an independent and in-depth assessment of the efficiency, effectiveness and outcomes of trainings through assessing information and analysing key issues. This enables the finding of unintended results as well as the determination of necessary changes and opportunities. Information generated from evaluations contributes to organizational learning and provides the basis for successful training results and supports the achievements of intended long-term outcomes.

Thus, an M&E system continuously collects evidence on the results of trainings and reviews their progress. It assesses to which degree the trainings meet the expectations of participants, evaluates whether the training portfolio reflects the needs of potential clients and identifies problems in implementing the trainings. This information is then made use of to improve the trainings and enhance the training portfolio. The following figure demonstrates this process:



Accordingly, an M&E system is a major tool for the quality management of your training programmes. Quality management promotes value-add for your training participants on the one hand and guarantees the reputation and competitiveness of your training organization on the other hand.

Since qualified trainers are a key element for the success of your trainings, you need to establish training of trainers to improve their areas of expertise and their specific teaching skills.

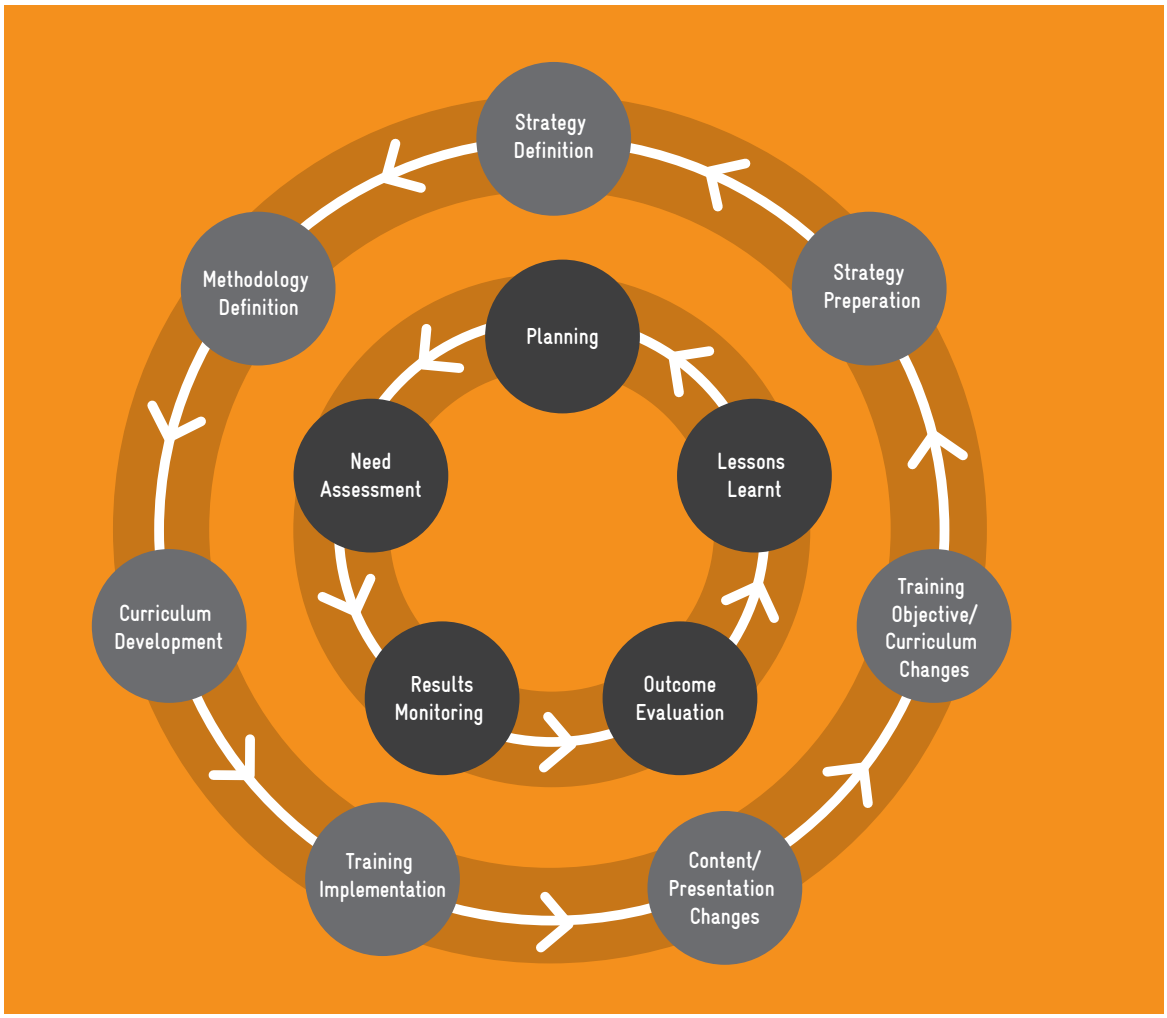
Additionally, your management system needs to be capable of providing trainings that are consistently controlled as well as capable of assessing the participants´ performance and their long-term benefits within their area of operation.

In the case of CCA, the training needs to ensure raising the awareness of participants on climate change and thus foster capacity building for implementing initial adaptation measures as well as for developing a CCA strategy for their enterprises.

6.4.2 The M&E system as an integrated part of the training management cycle

Each step of the M&E system and information gathering needs to happen at a certain point of time. The system proposed here is an example of how M&E can be realised as an integrated system of training management. You need to adapt the steps to your processes and capacities and target group preferences as the determining variables for your operations.

The following chart gives an overview of a training management cycle (the outer cycle) and the connected elements of an M&E system (the inner cycle) which serves as the quality management for the single steps of the former and will be presented in more detail within the coming sections.

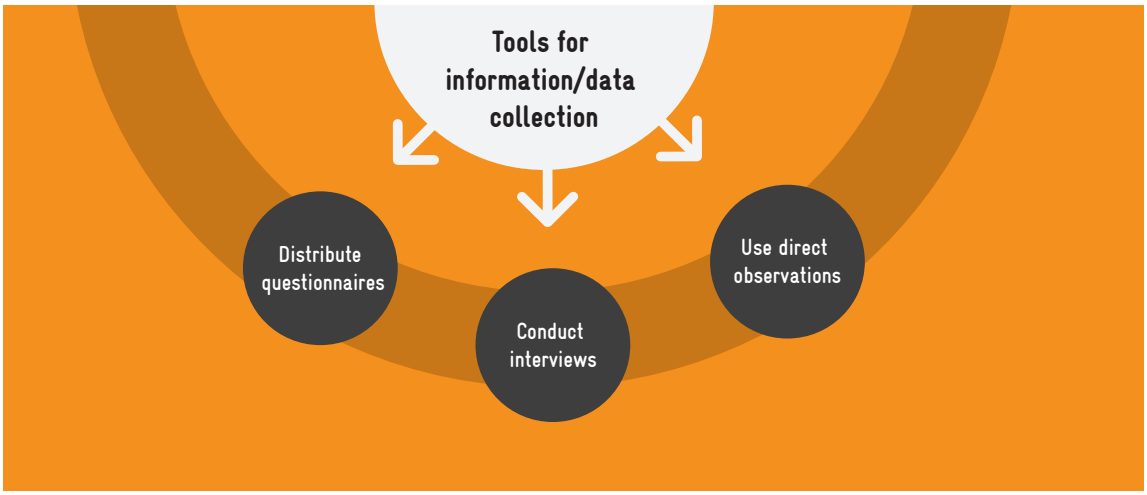


The M&E system consists of a Planning phase for defining goals, tools and responsibilities. A Needs Assessment follows prior to a training which consists of a general Demand Assessment and a specific Pre-Assessment with training participants. The Results Monitoring is conducted during and after the training; this is later followed by an Outcome Evaluation. The cycle finalizes with Lessons Learnt as a strategy review and a renewed basis to start off with the Planning phase for the next training.

6.4.3 Gathering information for M&E

A critical issue of a successful M&E system is the gathering of information. You need to address this issue for the Pre-Assessment, Needs Assessment, the Results Monitoring and the Outcome Evaluation.
The following figure shows a planning approach for the gathering of information:

In order to choose the appropriate source of information, you need to determine the subjects of evaluation in terms of your activities, your intended immediate training results and your desired long-term outcomes. You need to define goals and objectives on each level of evaluation, identify measurable indicators and develop or adjust tools for data collection. Existing tools for this last step are exemplified within the next figure:



Generally there are three ways of collecting information for M&E: Distributing questionnaires, conducting interviews or using direct observations. Out of these you need to select suitable methods for each relevant step. To gain sufficient information you need to select representatives of your relevant target group. Consequently, quantitative and/or qualitative data are gathered which you need to interpret and evaluate. The results offer you a substantial basis to improve your training portfolio, as well as contents and methods of your trainings.

6.4.4 Pillars of the M&E system

Planning

The Planning of M&E should be scheduled when drafting your training schedule. Planning is an important step for ensuring a structured and well-working process of M&E. Within the planning phase you need to define the goals of the trainings and develop tools for M&E.

Demand assessment needs to be done regularly to assure the topicality and the effectiveness of trainings. Pre-assessment allows adjusting trainings to a specific target group. Results monitoring follows directly after the respective training. Outcome evaluation needs to be realised after mid- to long-term outcomes are expected can be observed, typically not before 6 months after the training.

An internal session of all trainers regarding lessons learnt usually happens at the end of a Training Management Cycle and prior to the start of a new training programme.

Need Assessment I – Demand Assessment

The goal of demand assessment is to be aware of emerging trends and key issues in the field of action to enable your training organisation to continuously offer demand driven trainings. The frequency of demand assessments depends on the training subject and the frequency of trainings itself. Pre-assessments generally should be carried prior of each training, for example within the registration process for a training. Exceptions on the frequency of pre-assessments can be made if the backgrounds of the target audience are always similar, if only minor developments are expected in the topic area. As climate change and CCA are both very dynamic issues, clearly, demand assessments need to be done regularly. The guiding question for CCA trainings is:

- *"What are the needs of the business community and what are insights and general trends in the field of climate change (adaptation)?"*

Demand assessment can be carried out with external targets (business community, governmental authorities, experts in the field) and internally (own staff). You should conduct this assessment at least once a year. Altogether, the frequency of the demand assessment depends on the frequency of your trainings, pace of research insights in your relevant field and general needs of your target audience.

The information gathered through the various methods focuses on:

- Trends, challenges and support needs of businesses in your field of action
  - What are new climate projections, new local climate change trends, extreme weather events, emerging government regulations, new demand patterns, etc.?
  - What are risks and opportunities of CC? How can adaptation measures be developed? What are important aspects of a CCA strategy?
- Extent to which your current training portfolio (subject areas, contents, methods…) meets the demand of your target group
  - Does your training portfolio respond to the relevant CCA topics and developments of the participants' sector?
  - Do your training methods fit the target audience? Why/Why not? (e.g., environmental and risk management directors, etc.)
- Suggestions on the subject area, contents and learning objectives of new trainings
  - Emerging adaptation issues or stakeholder requirements within certain sectors
  - Demand for training of environmental management experts.

You need to evaluate the results from your demand assessment activities and formulate conclusions on how your existing trainings can be adapted, which new trainings can be developed and how these conclusions can be implemented.

Need Assessment II – Pre-Assessment

The goal of pre-assessment is to adapt a training to your participants' needs and expectations. The guiding question for CCA trainings is:

- *"What are the most useful tools and most practical learning experiences that you would expect as a participant in CCA training?"*
- *"How can we assure that the knowledge on CCA is put into practice?"*

The target group of pre-assessment consists of your future participants of the training but also the superiors or representatives from HR development / HR departments. Also, your own staff might be a great source of information, particularly those who are in direct contact with your particular target group; they can also assist in phrasing the most effective questions. However, a structured interview also with staff members is of great importance to achieve comparability and solidity of statements.

Objectives of pre-assessment are:

- Analyse the interviewee's expectations concerning the trainings
  - E.g., expected content focus on general climate change challenges, branch-specific adaptation topics, and introduction to adaptation measures or developing a CCA strategy etc.
- Collect useful (background) information on the future participants
  - What is your know-how in the field of climate change?
  - What is your role within your enterprise and do you have the authority for decision-making?
  - What is your area of expertise, e.g. risk management, environmental management, supply chain management, marketing etc.?
  - Is there any other suitable person/department that should take part in the training?

- Adapt the training content, exercises, learning methodology and sequence of the training to the needs and expectations of the participants
  - How practical should the training be? How theoretical can it be? State the optimal ratio.
  - Are there any exercises/tools which you would like to test or learn about?

You should carry out the Pre-Assessment in the run-up to the training before, during or right after the registration process of participants. You can realise this with questionnaires or telephone interviews.
For in-house programmes Pre-Assessment is conducted by means of face-to-face or telephone interviews after confirmation of the training assignment. Your primary interview targets are staff development and/or HR department officers responsible for the training within the company. However, it is still of great use to also interview selected training participants.

The interview questions focus on:

- Experience and skills of the participants
  - Have you had experiences with climate change impacts in your working environment?
  - What experiences do you have regarding adaptation measures for CC?
- Motivation for participating in the training and expectations on training outcome
- Expectations on training contents, sequence of the training and learning methods

Results from pre-assessment activities should be regularly integrated in the training preparation process regarding all aspects of the training: sequence and length of topics and individual sessions, practical and theoretical input, use of case studies, learning methods employed, including frequency of interaction and type of exercises etc. For example, case studies can be selected in accordance with the industry sectors represented in the training; or the amount of background information and explanation of key terms and concepts can be extended or reduced in accordance with the knowledge and skills of the participants.

Results Monitoring

Results monitoring assesses the quality of a training by gathering the feedback from training participants right at the end of a training (see Section 0). The goal of results monitoring is to guarantee a high learning degree, the quality of your training materials and effectiveness of your methodology. The guiding question for CCA trainings is:

- *"How useful did participants find the CCA training for their daily work?"*

Results monitoring is conducted by means of feedback forms containing closed and open questions on:

- Training content and transfer possibilities
  - Was the training content as comprehensive as you expected?
  - What are the core lessons you learnt about CCA during the training?
  - Will you be able to implement specific adaptation measures in your enterprise?
  - Will you be able to apply the learnt guidelines and the Climate Expert to develop a CCA strategy?
  - What would you improve, substitute or leave out completely?
  - Do you have specific suggestions for improvements?
- Training methods
  - Did the training methods help you understand the different CCA topics?
  - Which methods did you like? Which were not helpful?
  - What kind of new methods would you suggest?
- Achievement of objectives
  - What have been your objectives for the training? Have those objectives been achieved?
  - What could be done to achieve your objectives within a training?
- Trainers, participants, organization of the training

- How did you like the trainers of this training programme? Were their experience and expertise helpful? Did they answer questions to your satisfaction?
- Are you satisfied with the other participants? Did a fruitful and open exchange among the participants take place?
- Was the training well organised? Did you like the mixture of content wise input and practical tasks/ case examples?

Important information gathered from results monitoring on any of these aspects should be made use of for improving the training. This regards for example those aspects of the training which have been ranked particularly negatively by the participants.
In the case of pilot trainings or trainings which have undergone significant changes (e.g. changes resulting from the transfer from an in-house to an open training setting) a comprehensive review should be conducted immediately after the pilot training.

Outcome Evaluation

Outcome evaluation aims at assessing the success of a training in terms of the acquired expertise after a certain period of time. The objective is to evaluate the utilisation and transfer of the acquired learning as well as the degree of capacity building in the respected field of action. The guiding question for CCA trainings is:

- *"How have the trainings raised awareness and knowledge for identifying issues and opportunities of CC?"*
- *"Have trainings built capacities for implementing adaptation measures at the participant's enterprises?"*

You can accomplish outcome evaluation either with the help of questionnaires or interviews (e.g., semi-structured face-to-face interviews). Outcome evaluation is designed for past participants of your trainings but also for their superiors and for members of the staff development / HR department. In order for outcomes to be demonstrable this can only be carried out after at least three months. This makes it more likely that intended mid- to long-term outcomes are already emerging within the enterprise accompanied by observable results for the former participants/ interview partners.

The outcome evaluation should focus on collecting information on:

- Positive and negative aspects of implementation of the trainings (success factors, obstacles, framework conditions)
  - To what extent have you been able to implement CCA measures or a CCA strategy? What went well and why?
  - Which obstacles did you experience while implementing measures? Were the obstacles addressed during the trainings?
- Appraisal of learning methods and tools, exercises and case studies used during the training in terms of their usability in practice
- Training's significance for the interviewee (practical use of strategies and technical skills, contacts established)
  - Which insights or tools of the training did help you implement CCA measures or a CCA strategy?
- Changes that can be attributed to the training (including negative effects and those not intended)
  - Are you able to identify changes within your enterprise which were brought about by insights and tools gathered in the training?
  - Which negative developments would you ascribe to the training?
- An evaluation of achieving the learning objectives
  - Did you achieve your intended objectives regarding CCA in your enterprise?
- Suggestions for overall improvement of the sequence of the training and of the training portfolio
  - Do you have any suggestions on how to improve the content, methods or portfolio of our trainings?

Outcome evaluation interviews and enterprise visits are also a good opportunity for you to identify existing obstacles and further needs of your former participants as well as for presenting additional training and advisory services to them and their organisations.

The results from outcome evaluation are comprehensively reviewed at an annual M&E Review and Planning Meeting at the end of a training cycle (see next section). The results are analysed both for each training module and across the training portfolio to draw conclusions on how to improve the content, learning methods etc. of the trainings to be of greatest use to its participants. Outcome evaluation also provides useful information for the review of the training objectives. Additionally, from outcome evaluation best practice examples for your trainings can be developed.

Lessons Learnt

A Lessons Learnt session aims at:

- Comprehensively reviewing all information gathered in M&E throughout the year to draw conclusions and determine next steps for improving existing trainings and enhancing the training portfolio
  - What are the overall results and long-term outcomes of our trainings? To what extent did we accomplish our intended goals? Did enterprises in question start to implement CCA measures/a CCA strategy?
  - Were our participants satisfied with the content and methods of our trainings? What did they dislike and what kind of improvements did they suggest? Would the implementation of those suggestions serve to improve our long-term goals?
  - How can we improve or complement our current training portfolio in order to further promote CCA within the private sector in India? How can we attract more enterprises? How can we guarantee a successful implementation of CCA measures?
- Planning M&E activities in the next training cycle
  - How well did our M&E system work? Do we have sufficient information to evaluate our activities and training results?
  - Do we need to adapt or complement our current tools and methods to gather information?
  - Do we need to shift the timing of our M&E steps?
  - How can we increase the interest of our clients to participate in an assessment and evaluation process?

The M&E meeting takes place at the end of a Training Management Cycle and should include all staff members involved in M&E activities for the respected trainings. The discussion of next steps for training improvement and enhancement of the training portfolio is based on the evaluation reports for Demand Assessment, Pre-Assessment, Results Monitoring and Outcome Evaluation.

6.4.5 Making use of M&E results to improve your training offer

This step is closely connected with the topics of Lessons Learnt since it needs to be your goal to implement important M&E insights and ensure improvements for your next training programmes. In order to develop adequate strategies which make use of M&E results it is necessary that you bring together observations of different staff at different stages of your M&E system.

When reviewing the results of your M&E system and implementing conclusions into an adapted strategy it will be necessary for you to consider diverse topics:

- Update and adapt your training content to the results of your M&E system
- Review your trainer pool and conduct training of trainer to enhance their qualification and training skills
- Install consulting teams to help enterprises implement CCA measures when you discovered a huge interest and demand of your clients via your Results Monitoring and Outcome Evaluation

In the end you need to set priorities, define concrete steps to be taken, implement work flows and assign responsibilities to ensure the realisation of potentials for improvement regarding your training programmes and M&E system. For example, it can be helpful to institutionalise regular meetings after completed trainings to compose reports and plan next steps for the integration of new insights.

6.4.6 Communicating M&E results

Communicating your M&E activities, results and your steps taken in response to these are a valuable undertaking both for enhancing your internal processes and your external relations.
Internal communication:

- Increases the knowledge about your training approaches and your portfolio
- Triggers activities for internal organisational learning
- Enhances support, commitment and participation

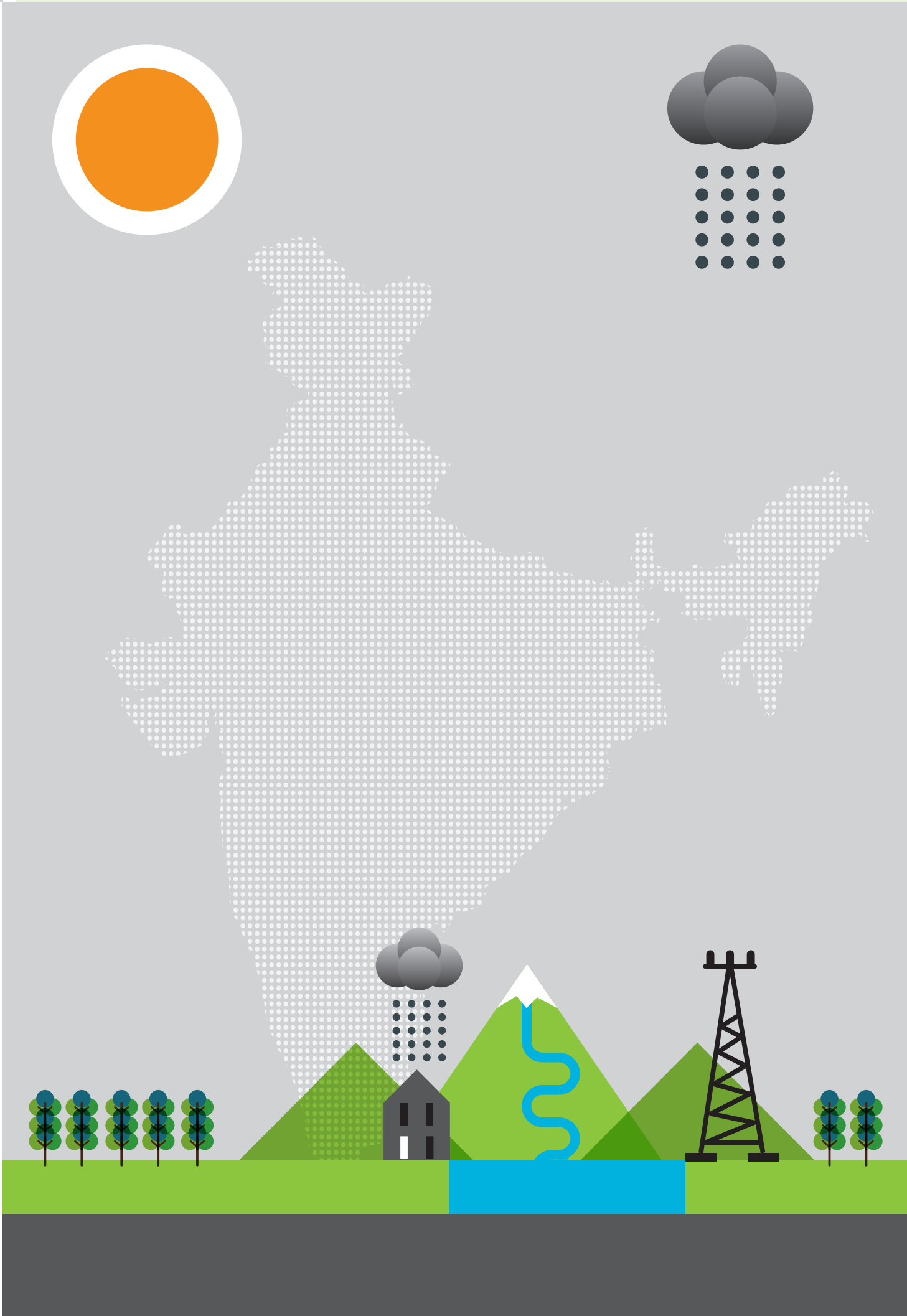
External communication:

- Marketing effects for your training programmes within the business and expert community
- Opportunity to promote the success of your training through best practise examples
- Demonstrates up-to date and high standard trainings
- Proves a demand-oriented and responsive approach

For an effective communication strategy it is highly recommended to plan your communication systematically. You need to set specific goals, choose suitable communication tools and channels, draft a time schedule and allocate responsibilities.

Internal communication can happen via internal training programmes, specific programmes for trainers, quarterly meetings, company magazine, newsletters or the intranet.

External communication can be accomplished by announcements during the release of new training programmes, during the registration process for trainings, in accordance with the Needs Assessment or during the trainings. Further, it can be carried out by means of different communication channels such as newsletters or social media.



7 References and further reading

Climate change and adaptation from a business perspective

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National Climatic Data Center:
http://www.ncdc.noaa.gov/

Intergovernmental Panel on Climate Change:
www.ipcc.ch/

UK Climate Impacts Programme: Identifying adaptation options.
http://www.sfrpc.com/Climate%20Change/6.pdf

World Bank Group: Climate Change Knowledge Portal, *http://sdwebx.worldbank.org/climateportal/index.cfm?page=country_historical_climate&ThisRegion=Asia&ThisCCode=IND*

Training methodology

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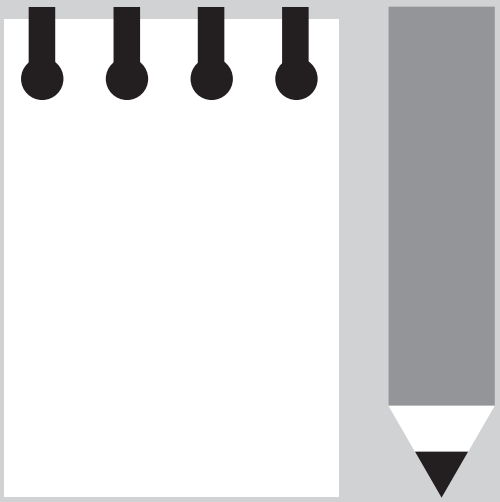

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- Natural Resource Management
- Private Sector Development
- Social Protection
- Financial Systems Development
- HIV/AIDS-Blood Safety

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