

Green Paper on Scaling-Up of MED TEST II Activities

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**Regional Activity Centre
for Sustainable Consumption
and Production**

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1 Introduction

The SwitchMed Programme is implemented through the collaborative efforts of the European Union, UNIDO, UNEP/MAP (Mediterranean Action Plan (MAP) and its SCP/RAC (Regional Activity Centre for Sustainable Consumption and Production) implementing actions related to the Barcelona Convention, and the UNEP-DTIE (Division of Technology, Industry and Economics).

SwitchMed is working to facilitate the shift towards sustainable consumption and production (SCP) in the South Mediterranean region. Composed of three interlinked components (Policy, Demonstration, and Networking) that support industry, emerging green entrepreneurs, civil society, and policy-makers, the programme aims to change the way that goods and services are produced and consumed so that both human development and the satisfaction of human needs are decoupled from environmental degradation.

Capacity-Building and Resource Efficient Cleaner Production (RECP) Results: An Output of SwitchMed's Demonstration Component

Within SwitchMed's Demonstration Component, three sub-components are active: the MED TEST II Demonstration, Green Entrepreneurship, and Civil Society. Within the **MED TEST II Demonstration sub-component**, useful ground has already been laid during 2009-2012 (under MED TEST I) with the development of national capacities in Egypt, Morocco, and Tunisia and application of UNIDO's integrated TEST approach to demonstrate the economic and environmental benefits of resource efficiency and sustainable production. Further information is available from www.unido.org/medtest.

TEST (**T**ransfer of **E**nvironmentally **S**ound **T**echnologies) is a comprehensive and integrated approach to address the challenges and barriers industries face to become more resource and energy efficient, while increasing productivity, access to international markets with good quality products and comply with environmental standards. The TEST approach embeds traditional "one-stop improvement" or "audit-like" approaches to resource efficiency within a system approach, driving continuous learning and improvement. It builds on: i) the Cleaner Production Assessment (CPA) methodology, which includes exploring new eco-efficient technologies, ii) an effective and supportive information system for material and energy flows based on Material Flow Cost Accounting (MFCA) principles; iii) the core elements of an Environmental Management System (EMS), and an Energy Management System (EnMS) to sustain performance.

Actors Engaged within the MED TEST II Demonstration Component

A variety of actors are making important contributions through their designated role within the MED TEST II Demonstration Component:

- The key stakeholders which include representatives of government, industry, financial sector and academia. Governments are represented by the National Focal Point teams – who act as political sponsors and thereby institutionally anchor the programme and contribute ideas for the current implementation and future dissemination and upscaling of sustainable production practice within the 8 participating countries
- MED TEST II national implementation teams – who are supporting the capacity-building of enterprises and additional service providers within each of the participating countries to apply the TEST methodology and thus generate evidence of benefits

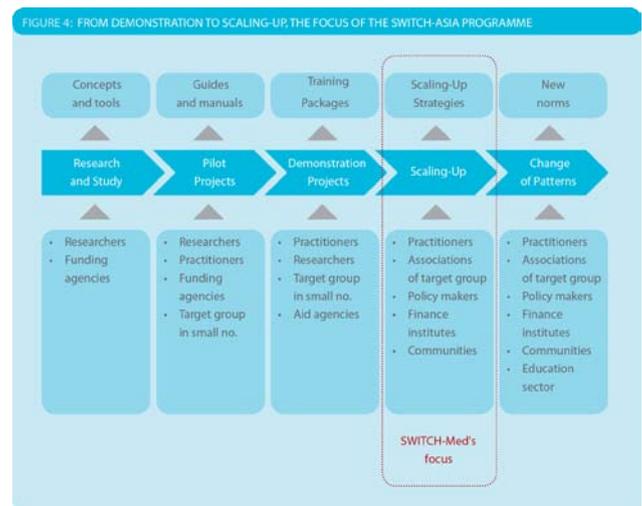
- Service Providers – who are gaining hands-on experience in applying TEST in companies and reflecting about the business strategy to expand their portfolio of services in the domain of resource efficiency for further client acquisition within their respective country
- Enterprises – which are undertaking the TEST demonstration activities, whose experience and results are expected to contribute towards catalysing the market for sustainable products and services in the South Mediterranean region
- UNIDO MED TEST Management Team – which has identified, engaged, and is supporting the capacity-building of service providers and is directing and supporting MED TEST II implementation in the 8 participating countries and contributing insights towards building up a strategy for scaling up beyond this seed funding
- Experts that they have been contracted to support programmatic activities (e.g. CAPRESE engaged by the Network Facility, supporting UNIDO and by extension the 8 country teams, in role of international scaling up expert)

Scaling Up: An Output of SwitchMed’s Networking Facility

One of the outputs of SwitchMed’s Networking Facility is to analyse lessons learned and to develop follow-up actions in response to the core question: **“How can demonstration activities be sustained beyond the lifetime of the SwitchMed Programme?”**

While each SwitchMed sub-component is engaged in completing planned demonstration actions and documenting their own results within the given project lifetime, the Networking Facility is focusing on elaborating responses to this core question and facilitating the co-creation of follow-up actions to move from demos to scale (see **Figure 1**).

Figure 1 – Focus of the Networking Facility



2 Objectives of this Green Paper

Using the terminology of the European Commission, this document has been referred to as a “Green Paper” for the purpose of elaborating a discussion document and launching a process of consultation. Interested stakeholders are invited to contribute their views and information. This document functions as a source of inspiration and guidance for the reflection about and planning of activities for the phase following MED TEST II implementation, in so far that it:

- Clarifies **what** is meant by the notions of “scaling up” and “leverage points” within the context of the SwitchMed programme
- Offers guidance regarding the **how** of scaling up in the form of a guiding framework and the factors to be considered in designing and planning national scaling up activities
- Delineates **what** is expected to be scaled up in the area of the implementation of resource efficiency in the target countries, as a result of the MED TEST II demonstration activities

- Specifies **who** within the participating countries (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, Tunisia) is expected to do the scaling up
- Documents the **starting points** that the national teams have indicated as priorities for developing their respective National Scaling Up Roadmap

During 2016 and 2017, this “Green Paper” will evolve into a “White Paper” containing the national analysis and eventually, local roadmaps (national scaling-up studies) to expand the MED TEST II approach and its outputs beyond the current lifetime (and seed funding) of SwitchMed.

3 Users of this Document

This document has been prepared for those involved in the reflection about and design of follow-up actions to scale up MED TEST II demonstration activities in the 8 countries (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine, Tunisia) engaged in the SwitchMed Programme.

The expected direct users of this document include:

- Local teams of SwitchMed's MED TEST II sub-component, including the Service Providers that have been trained on and are implementing the TEST methodology, within the 8 participating countries
- Their stakeholders within designated National Focal Point institutions and government ministries within the respective countries

These additional following audiences might be interested in this document as a source of inspiration:

- Participants in SwitchMed's Green Entrepreneurship and Civil Society interlinked components as well as the Networking Facility
- Staff within UNIDO, UNEP, the European Union, and SCP/RAC who are involved in developing activities under the SwitchMed umbrella
- Other development actors and donors who are interested in co-ordinating and leveraging activities being implemented within the SwitchMed framework
- Other external practitioners and advocates who are interested in the promotion of resource efficiency in industrial enterprises

4 Scaling Up: Framing and Definitions

Since the 1970s, when The World Bank advocated the need to address development challenges in a comprehensive manner at large scale, interest in the concept of “scaling up” has been growing and now extends to a variety of sectors (e.g. environmental protection, health, business), each with its own interest, orientation, and terminology.

In the broadest sense, scaling up suggests “doing more” of something but that “something” varies, depending on the domain under consideration. While extensive academic literature is available on the subject, there is no internationally-accepted definition of scaling up, and while the concept of leverage points has entered into common parlance, here too, we find that there are a variety of ideas regarding ways to concretely move forward and related discussion about relevance, priority, implications, and so on.

4.1 Achieving More Impact

During its 2004 Shanghai Conference on Scaling Up, The World Bank defined scaling up as “expanding, adapting, and sustaining successful policies, programs, and projects in different places and over time to reach a greater number of people”¹. The UK Department for International Development (DFID) describes scaling up in terms of “more benefits², more people, more quickly, longer lasting, and more equitably”³. For SWITCH-Asia, scaling up refers to increasing development impact in terms of the number of people involved or geographical area covered, the financial resources that have been mobilised, the quality of benefits, and/or policy uptake (institutionalisation)⁴.

Other organisations working in the field of development cooperation associate the term “scaling up” with an increase in outreach of project or programme outcomes, and look at the type of impact, quality of impact, impact for whom, and potential for sustained timeframes⁵. UNIDO⁶ indicates that scaling up can be understood as a significant reduction of the effort required per company to implement Resource Efficient Cleaner Production (RECP), i.e. greater efficiency and effectiveness in RECP assessment and implementation, or ‘making RECP easier for enterprises’. This is in contrast to “mainstreaming”, which UNIDO sees as embedding drivers and incentives for RECP implementation i.e. providing stronger incentives for RECP consideration and its continued implementation, or ‘incentivizing enterprises for RECP’. According to UNIDO, mainstreaming and scaling up are viewed as complementary approaches to achieve the policy goal of transformative increases in the numbers of enterprises committing to RECP and in the scale of economic and environmental benefits they individually and collectively achieve through implementation of RECP methods and techniques.

4.2 Four Perspectives of Scaling Up

Within the context of the current SwitchMed programme, the focus is on scaling up the outputs of the MED TEST II demonstration component.

Building on The World Bank definition, SwitchMed is interested in scaling up activities and their outputs to achieve more impact, i.e. “bring more benefits to more people”. **In discussions about scaling up MED TEST II approach and its outputs, this is taken to mean expanding, adapting, and sustaining successful demonstration actions in more locations and over time to reach beyond the original target groups, with an ultimate vision of sustainable consumption and production becoming mainstreamed into everyday economic life across Southern Mediterranean countries.**⁷

¹ Described in Hartmann A., and J. Linn (2008). **Scaling Up: A Framework and Lessons for Development Effectiveness from Literature and Practice**. Wolfensohn Center for Development, Working Paper 5. Washington, D.C.: Brookings Institution.

² This mention of benefits actually refers to “outputs”

³ **Scaling Up and Out: Achieving Widespread Impact**, DFID (2001)

⁴ **Framing of Scaling Up SCP Practices in the Switch-Asia Programme**, B.Tunçer, F. Verspeek, and S. Müller, SWITCH-Asia Network Facility, October 2013

⁵ Based on Binswanger, H. P., and S. S. Aiyar. 2013. **Scaling Up Community Driven Development Theoretical Underpinnings and Program Design Implications**. Mimeo. Washington, D.C.: World Bank.

⁶ **Terms of Reference for the Mid-Term Evaluation of the Joint UNIDO-UNEP Resource Efficient Cleaner Production (RECP) Programme for Developing and Transition Countries**, July-October 2015

⁷ **Annex I** provides further theoretical material/models for reflection regarding scaling up, with illustrative examples based on the replication and extension of the results of MED TEST II

SwitchMed has adopted the understanding that scaling up can be thought about in terms of four different perspectives: quantitative, functional, political, and organisational. These are described in **Table 1**, together with illustrative examples of how these notions could be applied to scaling up the MED TEST II approach and its outputs within the current programme.

Table 1: Four Perspectives for Scaling Up and Illustrative Examples⁸

Perspectives	Short description	Examples of possible application within SwitchMed
Quantitative	Expanding in volume through replication, reaching out to more people across a greater geographical spread in the same sector or functional focus	<ul style="list-style-type: none"> - Existing TEST Service Providers deliver TEST to more companies in the same sector as where demonstration activities are currently being deployed - Develop the capacity of more service providers to deliver TEST in the same sector - Service Providers extend the geographical scope of their TEST implementation to cover additional regions, within the same sector or in additional regions
Functional	Expanding by increasing the scope or type of activity, including replication from one sector to another	<ul style="list-style-type: none"> - Service Providers offer TEST services to another sector that consumes significant volumes of energy, water, chemicals, etc. (e.g. textiles) - In addition to delivering TEST, Service Providers support companies in getting accredited for ISO 14000 or ISO 50001 - TEST Service Providers utilize additional perspectives (e.g. life cycle analysis, eco-innovation, eco-design, corporate social responsibility), and include additional services (e.g. business plan development, innovation strategy consulting, project and change management) to their offerings to support the adoption of RECP
Political	Expanding through activities that influence and support the development of policy	<ul style="list-style-type: none"> - Lobby for designing green purchasing schemes of companies, corporate social responsibility programmes, etc. - Service Providers lobby policy-makers to develop and implement regulatory and/or economic policy instruments that would encourage SMEs in a certain sector to take up the TEST methodology - Service Providers engage with Ministry of Environment officials to include TEST within a list of accredited tools - Lobby national governments to sponsor programmes in which TEST services are being provided to SMEs - Lobby financial institutions to provide preferential terms for companies that implement TEST - Encourage international corporate customers/buyers indicate a preference (e.g. through a code of conduct) for suppliers that have integrated the TEST for example through a code of conduct
Organisational	Expanding through organisational development activities and/or inclusion of additional institutions	<ul style="list-style-type: none"> - TEST Service Providers develop the internal management capacity of staff in potential client companies to implement TEST and sustain actions - TEST Service Providers develop business models that generate sustainable revenue beyond the support from the MED TEST II programme - TEST Service Providers engage with key stakeholders such as industrial associations, local authorities, etc. to develop cooperative approaches (e.g. EcoProfit[®] model-based initiatives like EcoBusinessPlan Vienna as one example) for improving resource efficiency - National Focal points are engaged to actively support the activities currently covered by MED TEST II, and beyond (like, for example, PREMA[®] or EcoProfit[®])

⁸ Developed by CAPRESE (2016) based on the work of Uvin, P. (1995). **Fighting Hunger at the Grassroots: Paths to Scaling Up**, *World Development*, 23 (6): 927-939

These four perspectives of scaling up are interrelated and scaling up rarely occurs only in one dimension⁹. Therefore, as an activity is scaled up quantitatively and functionally, it will typically need to also be scaled up politically and organisationally.

4.3 Objectives for Scaling Up in the Context of the Current Programme

The activities currently being undertaken within SwitchMed's demonstration sub-component are expected to achieve a number of outputs during the period of 2015-2017, which are detailed in Column 1 of **Table 2** below. UNIDO, SCP/RAC, and CAPRESE have brainstormed ideas and elaborated what could be imagined as a scaled up version of each of the outputs (contained in Column 2 below).

Table 2 - Objectives for Scaling Up

Expected Outputs to be achieved during 2015-2017 according to the MED TEST II logframe within the SwitchMed programme	Scaled Up Version of the Outputs to be achieved through implementing the National Scaling Up Roadmap, from mid-2017 onwards
Service providers and stakeholders are identified, engaged, and capacitated for TEST scaling up	<p>The identified service providers and stakeholders are actively engaged in scaling up the implementation of the TEST approach and its outputs (qualitative scaling up)</p> <p>Both the management and leadership of the national programs are clearly in the hands of relevant national stakeholders rather than being directed by UNIDO (organisational scaling up)</p>
Integrated sustainable production services are delivered to a pool of demonstration industries: TEST has been demonstrated, hands-on experience gained by local service providers and resource efficiency has increased at demonstration sites	Demand for sustainable production services from companies in the industries (e.g. Food & Beverage) where TEST has been demonstrated as well as other sectors (quantitative and functional scaling up) is now spontaneously directing to local service providers
<p>TEST experience has been shared (and)</p> <p>Enabling activities have been conducted for sustainable production market uptake in the southern Mediterranean region</p>	<p>An open knowledge marketplace across southern Mediterranean countries is operating, thereby facilitating the sharing and promotion of sustainable production practices beyond national borders (organisational scaling up)</p> <p>The National Focal Points of SwitchMed are actively supporting and promoting the adoption of TEST implementation by industry (political scaling up)</p> <p>National policy is actively promoting sustainable production approaches, the consumption of products and services that respect RECP principles, and has incentivized the practice of RECP (political scaling up)</p> <p>TEST service providers have developed business models that allow for revenue generation and have intermediate transitional business plans in place that could facilitate their access to operational funding from the private sector or the local governments rather than from donors (organisational scaling up)</p>

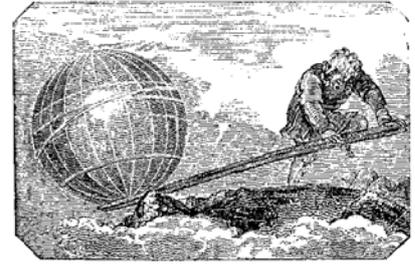
To most effectively achieve an objective – in this case, the scaling up of MED TEST II approach and its outputs, it is recommended to use the notion of “leverage points”.

⁹ Following Uvin, P. (1995). **Fighting Hunger at the Grassroots: Paths to Scaling Up**, *World Development*, 23 (6): 927-939

5 Exploring the Notion of Leverage Points

The concept of leverage is one of the most powerful in all of science, reaching back to Archimedes who said “give me a place to stand and with a lever, I will move the world.

In systems thinking, a leverage point refers to a place within the system’s structure where a solution element can be applied. Change force refers to the effort required to prepare and make a change.¹⁰



If a small amount of change force causes a *small* change in system behaviour, this is called a low leverage point. If a small amount of change force causes a *large* change in system behaviour, this is referred to as a high leverage point.

5.1 Places to Intervene in a System

Meadows (1999)¹¹, an environmental scientist and systems analyst, published arguably the most popular work on how to spot leverage points. She defined these as “places within complex systems where a small shift in one thing can produce big changes in everything”. However, we need to beware of falling into the trap of expecting to easily find these almost magical ways of shifting a system. Meadows herself pointed out that the notion of leverage points is embedded in legend: the silver bullet, the miracle cure, the secret passage, the magic password, the nearly effortless way to cut through or leap over huge obstacles. We not only want to believe that there are leverage points, we want to know where they are and how to get our hands on them.

In elaborating her concept, Meadows identified 12 places to intervene in a system and she ordered these from the least to the most effectiveness. **Table 3** offers a simplified view of this leverage point framework, which has been developed by CAPRESE as a way of introducing the overall concept.

Table 3 - Leverage Points for Intervening within a System illustrated by areas and activities relevant to SwitchMed

Level of Intervention	Area of Activity	Examples of activities that would support scaling up of RECP
Mindset	Influencing the way that people think about the system	Implanting sustainable production and consumption attitude and behaviour
Policy	Developing an enabling framework	Establishing goals, programs, policies Developing shared commitment Establishing rules, rewards, penalties Stimulating demand for RECP from buyers/customers/retailers
Management	Linking guiding and operational levels through information flows	Providing information about RECP benefits Creating feedback loops (e.g. verification of results) Providing expertise (e.g. technical assistance) Marketing RECP (which is similar to an information flow)
Operations	Enhancing capacities & services	Building RECP skills Developing absorption capacities within enterprises Improving the quality of RECP services and service mix Doing client acquisition for RECP Facilitating access to finance (based on the policy and rules to provide it)

¹⁰ From <http://www.thwink.org/sustain/glossary/LeveragePoint.htm>

¹¹ Meadows, D. (1999). **Leverage Points: Places to Intervene in a System**. The Sustainability Institute. Hartland, Vermont

Within **Tables 3** and **4**, CAPRESE has translated Meadows' conceptualisation into what we hope will be more easy-to-understand terminology and we have organised these within four levels of intervention, together with illustrative examples pertinent to the SwitchMed programme.

The elaboration of the leverage points (within Table 4) has been done bearing in mind that the main purpose is to scale up the outputs of the Demonstration sub component of the SwitchMed program, on which this Green Paper focuses.

In elaborating her concept, Meadows introduced the notion of a hierarchy of leverage points, ordered from least to most effectiveness. She infers that, for example, changing the rules of the system (incentives, penalties) is much more effective (her leverage point #5 in **Tables 3** and **4**) than simply altering physical infrastructures (related to her leverage points #10-11) or information flows (related to leverage point #6). According to Meadows, intervention at the lower leverage points, while potentially easier and more accessible, cannot deliver substantial system shifts. It is only by intervening in systems at the highest levels (e.g. at the level of changing mindset or paradigm, i.e. leverage points #1-2) that we hit a leverage point that totally transforms the system.

Table 4: Twelve Specific Leverage Points and Illustrative Examples

Level of intervention in a system, as assigned by CAPRESE (2016)	Leverage points from least to most effectiveness, based on Meadows (1999)	Short description	Possible examples of application within SwitchMed
Operations	12) Identifying optimisation opportunities	The lowest leverage point in Meadows' concept, this is about identifying which of the physical constraints of the system can be altered and therefore optimised	Adjusting the quantity and priority for implementation of identified RECP measures according to the different effects they may have Adjusting the time between individual phases of the TEST implementation, while a beneficiary company becomes accustomed to the recent changes. Optimising the number of company staff working with the service provider.
	11) Optimising material storage	This leverage point relates to adapting volumes (including storage) to the flow through the system	Increasing or decreasing the number of service providers equipped (certified?) to deliver TEST. Adjusting the size of the companies selected to participate in TEST demonstration activities.
	10) Optimising material flows	This leverage point is about ensuring that only the necessary materials or content are flowing through the (production) system according to its capacity (not too much, not too little)	Adapting the TEST methodology to the social, cultural, and economic context of the MENA region.
Management	9) Optimising process duration to rate of process change	Optimising decision-making and intervention activities requires taking into consideration the inherent delays in a system or realising that some of those delays can potentially be shortened to facilitate more timely management activities <i>For example, if a programme budget changes, it typically requires a couple of years for this</i>	MED TEST II is being managed by supra-national public institutions through national public and private institutions for the benefit of small size end beneficiaries in the private sector. This leverage point could relate to optimising the alignment of the capacity to respond to changes in the funding needs of the various stakeholders, from program sponsors to end beneficiaries.

		<i>to filter through and won't actually impact the end beneficiaries for some time after that. Meanwhile, the company might have gone bankrupt. Equally, if there is a new industry sector that suddenly pops up in a region and it would strongly benefit from TEST, the decision-making processes to validate that are too lengthy to support them.</i>	For a TEST beneficiary company, in a context where Procurement is performed every month, revising the material ordering system on an hourly basis is not necessary, but it might be appropriate to reduce the timeframe for the delivery of material from the loading bay to the factory floor. This leverage point is more about the timeframes rather than the material volumes.
	8) Taking corrective action based on negative feedback loops	Use of Monitoring & Evaluation processes to identify where a part of the system is performing differently to expectations and the remedial action taken to get back on track. This approach is reflected in Plan/Do/Check/Act.	Developing criteria to decide when to cease delivering TEST to a specific company because of lack of commitment from company staff. Promoting the installation of information systems on resource efficiency within companies; this is the level that is a source of information for leverage point #6.
	7) Deriving benefit from positive feedback loops (information flows)	While Leverage Point #8 keeps your system on track and on target, this leverage point points to the possibility of achieving more or better than forecast, by exploiting or leveraging information and the positive experiences within the system. Some of this can be designed, some of it may be more opportunistic. The important thing is to seek to capture the positive information and have processes in place to take this positive information into consideration when deciding on subsequent action.	Developing and sharing sector-specific success stories to build credibility for TEST and thereby facilitate the introduction of the approach to the other companies and to that same sector in other countries. Introducing and/or reinforcing financial schemes that support the implementation of resource efficiency measures. Providing rewards to individual company staff who were responsible for achieving verified improvements At the level of the beneficiary companies and the economy at large, the more savings from implementing RECP, the more money is available to invest in RECP.
	6) Improving the structure of information flows	To be able to respond efficiently, effectively and appropriately, the right information must be in the right place at the right time. This is achieved by developing robust and effective processes by which information is captured, interpreted, validated, structured, communicated, in other words an information management system.	Developing an information system to monitor resource efficiency improvements Introducing systematic, regular and timely cross-national sharing of experiences. Another example could be that through proper baselining, implementation of an information system, and monitoring & evaluation (as provided within TEST) beneficiaries will be encouraged to continue in their RECP practices as they see their system performing more effectively.
Policy	5) Changing the rules of the system	The rules of a system, along with the rewards and punishments that can be applied to enforce these rules, can be adapted to encourage specific behaviour by the actors involved.	Rather than insisting that an implementation of TEST is overseen within the confines of a MED-TEST program, through the engagement of carefully selected service providers, the TEST methodology could be made open source, allowing for anyone to teach it or use it.
	4) Changing the structure of the system	By changing the structure of the system, one is more or less changing the nature of the system itself, the way it is built, from its foundations to the materials with which is constructed. This still applies in the figurative sense.	SwitchMed has already incorporated this leverage point with respect to the way that capacity-building in RECP is done. Instead of experts from industrialised nations writing textbooks that are on bookshelves in developing nations, the capacities of local consultants are developed in-situ, who then train and advise company staff throughout a change process.

			Both the management and leadership of the national programs are clearly in the hands of relevant national stakeholders rather than being directed by UNIDO
	3) Setting and achieving system goals	By the time, we get to adapting system goals, there is an inherent risk that the system will no longer resemble its former self. Still this may be necessary, if the factors influencing the goals have been inadequately assessed or have evolved over time.	The goal of RECP, which can be considered part of the approach of Sustainable Consumption and Production, is reframed to be increasing profit, rather than focusing on the goal of reducing non-product output and therefore protecting the environment. Environmental protection and/or increased profitability can be used as motivations as long as we know what the goal is. A profit-oriented programme is likely to have different governance structures, different stakeholders, different processes to a similar environment-oriented programme.
Mindset	2) Changing the paradigms that govern the system	A paradigm can be described as a system of beliefs, values or principles which guide the way we perceive the world around us, make decisions and take action. This leverage point is about the ability to shift paradigm or adopt a new paradigm. The change in paradigm will most likely have an influence on the system goals or what we are trying to achieve.	For example, it may require a paradigm shift for a company owner to accept the concept that spending less is a more effective path to greater profits than increasing revenue. From a MED TEST II implementation perspective, if there is a general belief in the community that the welfare state will always provide for its citizens, the citizens will never call into question the possibility that resources may be limited.
	1) Transcending the paradigms that govern the system	This is the highest leverage point. It's about using paradigms consciously and mastering them. This is the ability to use trends, systems, and paradigms wittingly and not be entrapped by them. The important thing is that this is a state of mind. It is a way of engaging with the external environment. This is about meta-belief.	To bring this leverage point into the realms of SwitchMed, we can say that by working at the policy level and the demonstration level, the programme is not putting all of its eggs in one basket. Perhaps success will come from policy change, perhaps through using demonstrable case studies or even through word of mouth and other intangible forces that affect collective consciousness.

5.2 Gaining Traction on Resource Efficient Cleaner Production (RECP)

The aim of the SwitchMed programme is to increase the actual practice of RECP in pursuit of sustainable manufacturing. This desire has come about because of a set of **drivers**, i.e. aspects in the current environment that represent **threats** (e.g. scarcity of natural resources, increasing cost of energy, water pollution, etc.) as well as **opportunities** (e.g. a desire for more profitability). These drivers support growing interest in practising RECP – to use a simple metaphor: getting the RECP ball rolling faster.

At the same time, there are **barriers** (real or perceived current or possible future obstacles) that act as countervailing forces, which slow the momentum of the RECP ball.



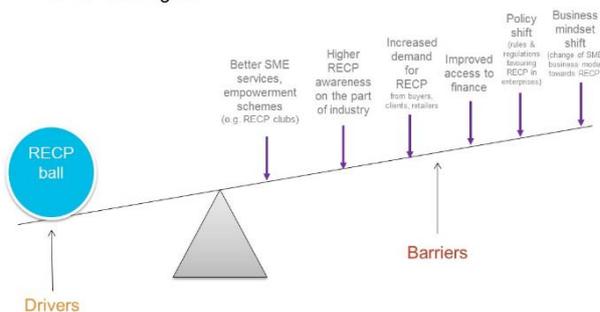
To get traction with the RECP ball and accelerate its rolling, following Archimedes, SwitchMed functions to introduce a fulcrum and a pathway (National Scaling Up Roadmaps) for moving industry towards more intensive engagement in sustainable manufacturing practices.

Through SwitchMed’s fulcrum function, the idea is to now focus on applying pressure at strategic places in the system, rather than directly trying to push the RECP ball upwards vertically.

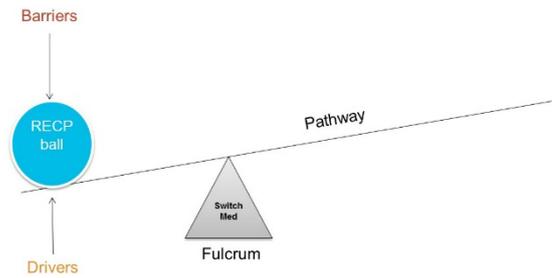
This facilitates a disconnect between the power of the barriers’ direct countervailing influence on the drivers and the RECP ball. These barriers to RECP adoption can now simply be seen as counter-forces working on the other side of the fulcrum to the drivers for RECP.

To simultaneously address the barriers and complement the drivers, through the SwitchMed programme, the idea is to apply force against the barriers by using the notion of “leverage points”.

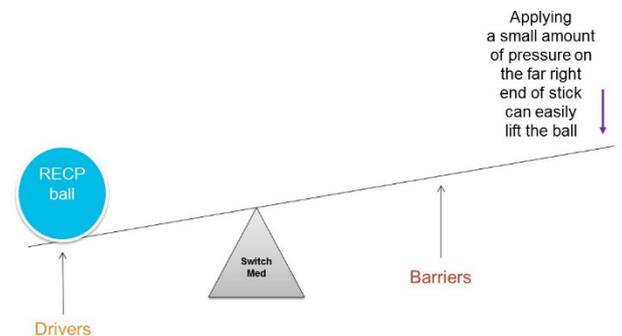
- A variety of leverage points offer the potential to raise the RECP ball higher



- The aim is to lift the RECP ball higher



- The aim is to lift the RECP ball high up



Following the thinking of Meadows, these are a variety of places to intervene in the system that can help to raise the RECP ball higher, i.e. result in higher adoption and practice of sustainable manufacturing.

6 Guiding Framework for Developing National Scaling Up Roadmaps

The overall objective¹² of SwitchMed is to facilitate the shift toward Sustainable Consumption and Production (SCP) in the Southern Mediterranean Region. A key outcome designed to facilitate this shift relates to increased demand for and supply of sustainable production services among industry in the southern Mediterranean countries. The contribution of the MED TEST II sub-component to this outcome is expected to be achieved through three outputs during 2015-2017; namely:

¹² Extracted from SwitchMed’s logical framework; the terminology of Objective, Outcome, and Outputs is based on the EC Project Cycle Management Guidelines (March 2004)

- Service providers and stakeholders identified, engaged, and capacitated for TEST scaling-up
- Integrated sustainable production services are delivered to a pool of demonstration industries: TEST has been demonstrated, hands-on experience gained by local service providers and resource efficiency has increased at demonstration sites
- TEST experience has been shared and enabling activities have been conducted for sustainable production market uptake in the southern Mediterranean region

6.1 What is expected to be scaled up?

From mid-2017 onwards, it is expected that implementation of the National Scaling Up Roadmaps (to be designed during 2016-2017) will build on the three above-mentioned outputs.

Bearing in mind the objectives for scaling up as elaborated in **Table 2**, it is proposed to use the definitions and understanding of scaling up (referring to **Table 1**) and leverage points (referring to **Tables 3 and 4**) to inform the development of the National Scaling Up Roadmaps to achieve these objectives (through implementation from mid-2017 onwards).

As a design principle, the idea is to develop a scaling up roadmap, tailored for each of the participating countries, that can lead to the biggest change with the least amount of effort.

Further guidance:

- Practically speaking, one place to start is to analyse how much resource efficiency optimisation potential exists within different branches / companies (i.e. identification of resource efficiency measures); all higher levels of a system should coherently support exploration of at least the economically-feasible potential for resource efficiency potential. (These are issues which should be addressed within National SCP Action Plans so stakeholders should have some information there and this goes down to the policy level and priorities and goals).
- Look at the intervention levels to get inspired and try to understand which levels will deliver the most effective effort-to-impact ratio
- Bear in mind that the leverage points are inter-linked and should therefore be consistent vertically within the whole system (this means that, for example, identified optimisation opportunities should be in agreement with the goals of the system and important information flows, etc. should not be missed (referring to **Tables 3 and 4**))
- Consider the notion that activities specified within the Operations level, on the one hand, are easier to address than interventions at the level of Mindset but on the other hand, could be expected to have substantially less transformative impact with respect to the overall system
- Remember that a key aim is to enable self-reliant and functioning markets for service providers offering technical assistance in the area of RECP well after the finalization of Med TEST II activities
- Bear in mind that a key question for exploration is the extent to which the beneficiaries of resource efficiency improvements and services are willing and able to pay for these

- Activities should go beyond providing only suggestions about how policy instruments can enable the business case for resource efficiency amongst SMEs
- Ideas should be included to ensure financial sustainability; the roadmap should elaborate how the offerings of service providers will be developed further and can continue in a self-sustainable way, without the need for continued public funding and subsidization from international donors.
- It might be useful to explore the extent to which partial public funding of resource efficiency services is needed; it could be worth exploring whether resource efficiency services could be delivered through public funding in the same way as government support is provided for new businesses, education, health, public transport, etc.
- As an activity is scaled up quantitatively and functionally (referring to **Table 1**), it will typically need to also be scaled up politically and organisationally
- With respect to **developing an enabling framework** that stimulates demand for RECP services, the following actions on the part of Service Providers could be envisaged: lobbying policy stakeholders, financial institutions, and/or local administrations to develop policy instruments (economic instruments/access to finance, voluntary instruments, etc.) for RECP; some inputs can be provided through MED TEST's policy module
- With the aim of **building awareness of the industrial sector** and thus stimulating demand for RECP services, actions could be specified in partnership with industrial associations, which could include awareness campaigns, seminars, provision of news through media/magazines, market intelligence, and client acquisition for potential clients for delivering RECP, etc.)
- With respect to **enhancing capacities and RECP services**, institutional service providers (e.g. National Cleaner Production Centres) might be prone to deliver more training and capacity building of commercial service providers, although commercial service providers may understandably not have an interest to build further competitors. Actions may include national skills development through training and certification schemes for consultants to qualify the offer, defining and profiling service mix/tools matching industry needs in the country to bring RECP into the core of business values, building partnerships between service providers to deliver integrated services, consolidating/expanding the business case for RECP across other industrial sectors, etc.)

6.2 Who is expected to do the scaling up?

As mentioned, a variety of actors have been engaged in the SwitchMed programme, each with a role to play in catalysing the market for sustainable products and services in the Southern Mediterranean region.

Specifically, the MED TEST II contractors (local service providers) are currently in the process of being trained on the TEST methodology and they are gaining hands-on experience in applying this approach in companies.

Given that the MED TEST II contractors are currently:

- in the process of building their capacities to use the TEST approach

- gaining direct experience of its implementation in enterprises
- engaged in an ongoing reflection about the business strategy and service portfolio that they could adopt to enhance client acquisition
- have a vested interest in influencing the conditions that would facilitate the expansion of the resource efficiency market in their respective country

...it is expected that the MED TEST II contractors will take a leadership role in “owning” and driving forward the development and execution of the National Scaling Up Roadmaps.

In moving forward, a National Scaling Up Lead will be suggested by UNIDO, with a clear role to facilitate the engagement of the National Focal Points. Such a National Scaling Up “lead” in each country would “own” the development and execution of the National Scaling Up Roadmap. This individual would be expected to drive and co-ordinate the scaling up activities as outlined in the National Scaling Up Roadmap. This person would also be the focal point for all communications regarding implementation activities.

Until such time as a National Scaling Up Lead is identified and appointed, the recommendation is for this responsibility to be lodged with the designated SwitchMed National Focal Points (sitting within a government ministry) or with an agency specialised in promoting SCP at a national level (e.g. a National Cleaner Production Centre).

6.3 Starting Points Identified within the 8 Participating Countries

The National Scaling Up Roadmaps are expected to be developed through a joint effort of all stakeholders currently involved in the MED TEST II programme, including MED TEST II local partners with input from the Policy SCP and National Action Plan (NAP) consultants – supported by CAPRESE in the role of the international scaling up expert.

With respect to who is actually doing the scaling up, this depends on what element is being scaled up and how, in each country. These roles and responsibilities should be discussed, determined, and included within the National Scaling Up Roadmaps.

As the participating countries have different political, financial, and social environments for SCP, it is envisaged that tailored national roadmaps will be prepared under the program’s scaling up activity. Drawing on the experience of SWITCH-Asia and other sources, SwitchMed assembled an initial list of ideas that could be usefully explored for their potential in scaling up MED TEST II approach and its outputs, as follows:

- Enabling policy framework for RECP
- (Enhancing) capacity and skills of service providers
- (Enriching) products and services of service providers
- (Undertaking) awareness-raising and capacity-building on the business case of sustainable manufacturing
- (Facilitating) access to clean technologies
- (Increasing) customer demand for resource efficient businesses or international trade (market) links (especially linked to green sourcing or sustainable supply chain practices of

retailer and producer companies in the textile, leather, food and chemicals sectors i.e. internationally such as Inditex or nationally i.e. local buyers)

- (Facilitating) access to finance for RECP

In November 2015, the national teams were asked to start thinking about their strategy for the scaling up of MED TEST II approach and its outputs on the basis of the above-mentioned leverage points.

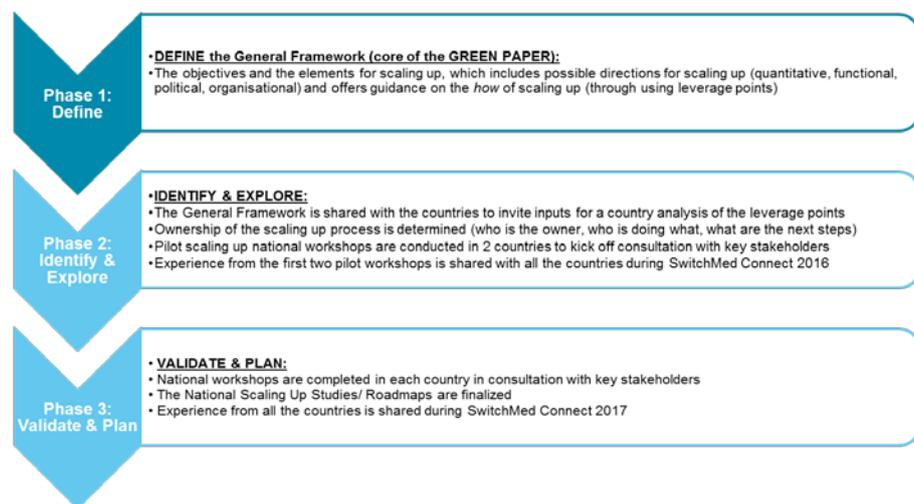
Annex II contains the starting points that have (so far) been indicated, per country. **Annex III** documents that first ideas that emerged through CAPRESE’s discussion with the participating country teams regarding the concept of scaling up. **Annex IV** crystallises the key ideas put forward and contains the outcomes of the SwitchMed Connect Session October 2015.

This material can usefully pave the way for each country team to engage in reflection and preparation for the next steps. It is also hoped that sharing of this material across the country teams serves to enrich each other’s perspectives and can eventually inform the elaboration of the National Scaling Up Roadmaps during 2016.

7 Proposed Steps for Moving Forward during 2016-2017

Figure 2 – Guiding Framework for Work Flow during 2016- 2017

Figure 2 suggests a process for moving forward with developing and validating the National Scaling Up Roadmaps.



7.1 Phase 1: Define

Phase 1 concludes in March 2016 with the sharing of a Green Paper developed by CAPRESE with input from UNIDO and the Networking Facility, which contains a general framework built on notions of “scaling up” (in **Table 1**) and “leverage points” (in **Tables 3-4**). Objectives have also been proposed (in **Table 2**) with respect to scaling up the TEST approach and its outputs (i.e. increased capacities to explore resource efficient potential and exploration of this potential itself).

This framework (i.e. Green Paper) is offered as inspiration for the subsequent step (during Phase 2) of developing the National Scaling Up Roadmaps. The ownership for developing and executing these roadmaps has been lodged with a National Scaling Up Lead to be identified and appointed within each participating country.

7.2 Phase 2: Identify and Explore

In this phase, which commences in March 2016, the MED TEST II local teams will be asked to:

- provide feedback on the proposed approach for scaling up (i.e. using a combination of quantitative, functional, political, and organisational perspectives, as detailed in **Table 1**)
- reflect on the objectives for a scaled up version of MED TEST II (see **Table 2**)
- identify the leverage points (referring to **Tables 3 and 4**) on which to focus to sustain activities beyond the duration of SwitchMed (it is recognised that the selected leverage points are country-specific)
- clarify their desired level of ownership.

In this phase, these actors will play a supporting role for the MED TEST II local teams:

- UNIDO will be contacting each country team to undertake a preliminary discussion about ownership and potential dates for national workshops
- SCP/RAC-SwitchMed Networking Facility, through the engagement of CAPRESE, will support the MED TEST II local teams in deepening their thinking about the general framework and incorporate feedback from national stakeholders through a combination of remote consultations (via Skype), facilitation of national workshops, and potentially an online survey.

Core ideas for the National Scaling Up Roadmaps will be developed through a set of country-specific workshops with the relevant stakeholders. The design for such a workshop will be developed by CAPRESE and the CAPRESE team will be on the ground to facilitate the workshop and support the documentation of the proceedings.

By 1 October 2016, it is expected that two such national stakeholder workshops will be designed and convened – with the aim of sharing the results at the upcoming SwitchMed Connect in Barcelona, Spain (preliminary dates: 18th-19th-20th October 2016). It is expected that the (draft) roadmaps, to the extent that they are available, will be shared and discussed through closed format workshop(s) in SwitchMed Connect 2016.

7.3 Phase 3: Validate and Plan

In 2017, in those countries raising interest and showing ownership for the scaling-up process, country-specific workshops can be organised. In line with the results of the workshops and further consultations, country specific roadmaps will be completed and compiled into a regional document with country chapters (scaling-up study for MED TEST approach and outputs).

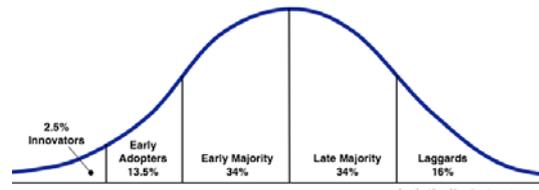
The final roadmaps will be shared at the third edition of the SwitchMed Connect.

8 Annex I – Further Inspiration for Scaling Up

The literature on diffusion of innovation can also usefully inform our reflection regarding scaling up as a large body of knowledge has been developed regarding the key attributes that facilitate that successful application and expansion of ideas and techniques. As you read further, put the TEST approach into the front of your mind.

From the Literature on Innovation

A leading scholar in the diffusion of innovation, Rogers (1962¹³) proposed that adopters of a new idea can be categorized as innovators (2.5%), early adopters (13.5%), early majority (34%), late majority (34%) and laggards (16%), based on the mathematically-based Bell curve.



Graphically, we can see the cumulative percentage of adopters over time: slow at the start, more rapid as adoption increases, then levelling off until only a small percentage of laggards remain. Rogers' categorization has subsequently provided an approach that has been widely used to understand and build the willingness to adopt an idea and in the process, to recognize the integral linkages to awareness, interest, evaluation, trial, and adoption.

Diffusion Across Six Zones

According to Moore's (1991¹⁴ and 2004¹⁵) work based on Rogers' framework, he divided the market landscape into six zones, characterized as follows:

The Early Market – a time of great excitement when customers are enthusiasts and visionaries are looking to be the first to get on board with the new paradigm

The Chasm – a time of great despair, when the early market's interest wanes but the mainstream market is still not comfortable with the immaturity of available solutions

The Bowling Alley – a period of niche-based adoption in advance of the general marketplace, driven by compelling customer needs and the willingness of service providers to craft niche-specific holistic solutions

The Tornado – a period of mass market adoption, when the general marketplace switches over to the new paradigm

Main Street – a period of aftermarket development, when the new paradigm has been widely deployed and the goal now is to fully elaborate its potential

End of Life – a period when whole new paradigms come to market and supplant the leaders who themselves have only just arrived!



¹³ Everett M. Rogers (1962). **Diffusion of Innovations**. The Free Press of Glencoe Division, New York

¹⁴ Geoffrey A. Moore (1991, revised in 1999 and 2014). **Crossing the Chasm**. Harper Business Essentials

¹⁵ Geoffrey A. Moore (2004). **Inside the Tornado**. Collins Business Essentials

The MED TEST demonstration sub-component plans to reach out to 500 – 1’000 SMEs within the project cycle, but long-term sustainability (which SwitchMed refers to as “mainstreaming”) requires uptake of the TEST methodology or sustainable manufacturing practices as a norm or day-to-day practice.

Considering the current implementation of MED TEST II demonstration activities and the hope that these will be subsequently sustained, to which of Moore’s zones will the market for TEST have developed as the end of the current lifetime of the SwitchMed project approaches?

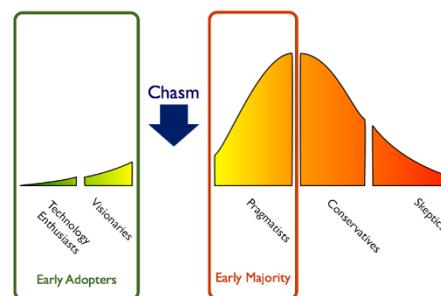
In developing the market for the TEST approach, Moore would assert that it is most useful to focus on one category at a time (bringing members through awareness, interest, evaluation, and trial to adoption), using each group as a base for gaining the adoption of the next group. This approach maps to the concept of quantitative and functional scaling up, as outlined in **Table 1**.

Crossing the Chasm

On this path, he contends that the most difficult step is actually related to making the transition between the early adopters (visionaries) and the early majority (pragmatists).

This is the chasm that Moore refers to in his seminal work. Crossing this chasm requires sufficient momentum for the new idea or technique to become the de facto standard.

Bringing this idea to the diffusion of TEST, it is therefore important to plan an implementation that addresses the needs and interests of specific members of the early majority, which Moore refers to as the “bowling pins”.



By targeting specific bowling pins in proximity to each other within the eco-system, reaching one bowling pin will have a direct influence on subsequent ones nearby and with whom they have relationships. Applying this theorizing to the MED TEST II demonstration activities in the course of being implemented, could we envisage that the Food & Beverage sector – which has been adopted for the most part as the initial focus within the 8 participating countries – as being the key segment which could then most effectively touch other industry segments, or in Moore’s analogy, knock over the other “bowling pins”? Will efforts at this stage of demonstration create sufficient momentum for the TEST approach to be adopted in the involved countries as a de facto standard?

Moving from First Infection to Pandemic

To evaluate the potential of TEST to reach the status of de facto standard, let’s take a look at the further work of Rogers (1983¹⁶). He went on to identify five essential elements that determine the probability and pace of adoption. These include: **benefit-to-cost** (the higher this ratio, the more likely an idea will be adopted faster than slower), **simplicity** (complexity creates hesitation; simplicity creates accessibility and invites more people to trial, speeding up the adoption process), **compatibility** (the new idea or approach fits into an existing mindset or interest), **trialability**

¹⁶ Everett M. Rogers (1983). *Diffusion of Innovations* (3rd ed). New York: Free Press

(giving the possibility to try out a new approach reduces risk and increases the chance for a favourable experience), and **observability** (creating an opportunity to share the new idea with a lot of people at one time, avoiding the need to “sell” one-by-one). Rogers gives us good advice about how to create an idea and advance a technique or approach that will get quick adoption.

To widely spread, diffuse, and sustain an idea, however, Fischer¹⁷ suggests that an analogy from the world medicine could be very instructive. He maintains that if you want to spread an idea fast and effectively, there’s no better guide than a virus! To go from being a single lonely virus to an epidemic, there are three challenges to overcome.

First, there needs to be an initial infection.

For this, Fischer points us to Rogers’ five essential elements that can be used to build an idea that gets quick adoption. Mastering those aspects means that there is a great probability that the market is going to pay attention. And for Fischer, that is the first infection in his Virus Model.

But a first infection is only one infection. What TEST needs is an infection that spreads across a large population. How does a virus remain effective and spread across a large population? It needs to have staying power! This is the second challenge.

In Fischer’s terms, the TEST approach would therefore need to be both “durable” and “sticky”. To achieve these qualities and infect a larger group of people than the first infection, Fischer would argue that the TEST approach would need to address the “hot-button” issues that matter to those people in decision-making roles.

Branding (of teams and projects) also creates staying power (durability). With its existing branding, using the Fischer framework, it could be argued that TEST already has this advantage on its side, giving the potential to stay around long enough to infect more and more people over time.

The third challenge, however, is to infect the right people. Applying Fischer’s Virus Model, TEST should aim to infect people who are idea leaders, trendsetters, and opinion leaders. These are typically the highly-networked actors with great influence and great visibility within organisations. By infecting them, there is a higher probability that they will infect others, thus being the vehicle to take an idea that can get quick initial adoption to a pandemic, i.e. widespread adoption.

Virus Model Dimensions	Assessment of relevant aspects
1) First Infection Refer to Rogers’ model: benefit-to-cost, simplicity, compatibility, triability, observability What is the likelihood of first infection?	 <u>Benefit-to-cost:</u> <u>Simplicity:</u> <u>Compatibility:</u> <u>Triability:</u> <u>Observability:</u>
2) Staying Power of the Idea To what extent are “hot-button issues” addressed? Has the project/team be branded? What about durability, “stickiness”? What is the likelihood of infecting over and over again?	
3) Infect the Right People To what extent have opinion-leaders, trendsetters, highly-networked actors been addressed? What is the likelihood of creating a pandemic?	

¹⁷ Developed by Professor Bill Fischer (2014), International Institute for Management Development (IMD), Lausanne, Switzerland. **Virus Model** used in the *Being Innovative* “global leadership in the cloud” by Programme Coach, Dr. Joyce Miller/CAPRESE.

§Mobilising the Energy for Change

The term “energy” refers to both the existing motivation and the availability of financial, human, legal, and organizational resources that are required for the implementation of a change project. The adoption of TEST could be considered in this light. In the early 1960s, Gleicher¹⁸ developed a very useful formula to understand the energy for change, as follows:

$$C = (a \ b \ d) > X$$

C = the change

a = the degree of dissatisfaction with the status quo

b = the clear or publicly announced desired state (situation) in the future

d = the first practical steps into the direction of the desired future state (situation)

X = the “costs” of change

The meaning of this formula is:

- a) For change to take place and the necessary motivation to develop amongst relevant stakeholders, there has to be a sufficient **degree of dissatisfaction with the status quo**; otherwise, the energy for change cannot be mobilised (*no pain, no change!*). If painful pressure in the company, institution, or administration is not high enough (*we are losing money, resources cost too much, pollution is too high, etc.*), little can be moved, even if there is strong external influence e.g. by forces such as UNIDO or donors or by local policy advocates, scientific analysis, technical consultancy, pressure from NGOs, or even if there are plenty of (external) funds.
- b) Secondly, a change process will only be successful if there is also a **clear perception** of what the **future situation** could and should look like once the change has been successfully implemented.
- d) Only if there are also clear, manageable and realistic **action plans** which soon lead to **first successful measures** will the process move from a) to b), i.e. the implementation of change will start and successful action will create new energy for change.
- X) But there are also **costs of change**. These can be either material (e.g. investments) or immaterial costs (e.g. lasting modification of working routines). If, for the relevant stakeholders, these costs exceed the energy resulting from the above-mentioned other “push” and “pull” factors a), b), and d), then no change will happen. Usually no change takes place without an acceptable cost-sharing scheme by involved stakeholders.

Applying this conceptualization to the scaling up of MED TEST II activities, it would be useful to look at how one or several of the factors in the equation could be modified. According to this reasoning, these are the ways to increase the probability that a change will actually be implemented (i.e. adoption of an approach at largescale).

¹⁸ Cited in Beckhard, R. (1975). **Strategies for Large System Change**. Sloan Management Review, 16(2), 43-55 and described in Cady, S.H., Jacobs, J., Koller, R., & Spalding, J. (2014). **The Change Formula: Myth, Legend, or Lore**. *OD Practitioner*. 46(3) 32-39 and utilised as a key concept within the PREMA[®] approach (Profitable Resource Efficient Management)

9 Annex II – Input from the Country Teams on Starting Points

Starting Points indicated by the **Palestinian Team**

Relevant and feasible? Potential starting point? Priority for you? Please elaborate! All remarks welcome!	Leverage Point – potential starting point(s)
This is a priority since no specific policy exist	Enabling policy framework for RECP
	Capacity and skills of service providers
	Products and services of service providers
This is a priority and is expected to be highlighted during TEST II	Awareness raising and capacity building on the business case of sustainable manufacturing
	Access to clean technologies
A priority and can be the highest as we are negotiating with the relevant national financing institution	Access to finance for RECP
	Customer demand for resource efficient businesses or international trade (market) links (especially linked to green sourcing or sustainable supply chain practices of retailer and producer companies in the textile, leather, food and chemicals sectors i.e. internationally such as Inditex or nationally i.e. local buyers)
Integrating the SC approaches in the academic programs of faculty of Engineering	Another leverage point of interest/priority

Starting Points indicated by the **Jordanian Team**

Relevant and feasible? Potential starting point? Priority for you? Please elaborate! All remarks welcome!	Leverage Point – potential starting point(s)
Priority #1	Enabling policy framework for CP
Priority # 4	Capacity and skills of service providers
Priority # 5	Products and services of service providers
Priority # 2	Awareness raising and capacity building on the business case of sustainable manufacturing
Priority # 7	Access to clean technologies
Priority # 3	Access to finance for CP
Priority # 6	Customer demand for resource efficient businesses or international trade links
Building partnership with all the supply chain actors	Another leverage point of interest/priority
Engaging with consumers towards ethical purchase and use	Another leverage point of interest/priority
Setting a percentage of the government purchase for green industries (e.g. 10-15%)	Another leverage point of interest/priority

Starting Points indicated by the Egyptian Team

Relevant and feasible? Potential starting point? Priority for you? Please elaborate! All remarks welcome!	Leverage Point – potential starting point(s)
Relevant and feasible. It is very good for starting point, especially we have like this framework in Egypt but need to be activated.	Enabling policy framework for RECP
Relevant and feasible. In Egypt, we have service providers with very good capacity and skills as ENCPC, EWATEC and Enviglobe. In Med TEST II we will train new SPs and build their capacities about (10 SPs).	Capacity and skills of service providers
Relevant and feasible. We need to have a database for certified SPs to make sure of the quality of their products and services. ENCPC or UNIDO office in Cairo could monitor that.	Products and services of service providers
Relevant and feasible. In Egypt, we need to promote for the business case of sustainable manufacturing. It is very important and it is the role of Ministry of Industry.	Awareness raising and capacity building on the business case of sustainable manufacturing
Relevant and feasible. But how? And who will own this access? It is very important to identify the responsible stakeholders for that.	Access to clean technologies
Relevant and feasible. And we need to make it more flexible and easy to reach to the demonstration companies.	Access to finance for RECP
Relevant and feasible. Customer is very important stakeholder and it is the key one.	Customer demand for resource efficient businesses or international trade links
Start a dialogue with the Egyptian government on the Cleaner Production and Green Economy not only sending them a framework or recommended strategy.	Another leverage point of interest/priority

Starting Points (in red bold) indicated by the Moroccan Team

Relevant and feasible? Potential starting point? Priority for you? Please elaborate! All remarks welcome!	Leverage Point – potential starting point(s)
It could be feasible. With GIZ, the Ministry of Environment has to develop a national program on RECP called PNERI (Programme National d'Efficacité des Ressources dans les Industries). It's clear that we could try, with the help of our stakeholders, to develop and enable a policy framework (we already have a law concerning energy efficiency (law 47-09) that is not effective > no implementing decree in force - probably set up in 2016).	Enabling policy framework for RECP
In coordination with our focal points -Ministry of Environment and Ministry of Industry – and with one of our stakeholders Maroc PME (ex ANPME), we could provide a kind of program of capacity building not only based on first local results (Med TEST I & II) but also with support on UNIDO experience in other countries.	Capacity and skills of service providers
Through and after the potential capacity building program it would be easy to develop a kind of reference or label authorizing the service providers to offer those different products and services.	Products and services of service providers
At the end of this MedTest II project, UNIDO should have to develop with his focal points and stakeholders a communication program in terms of benefit for industrial companies and the country at all levels (energy and water resources, wastes and non-product outputs).	Awareness raising and capacity building on the business case of sustainable manufacturing

We live in a small world. Access to clean technology is easy since the needs are known and / or some standby is ensured by national technical organizations dedicated to different industrial sectors.	Access to clean technologies
There are locally many financial institutions promoting financing in Energy efficiency and Renewable energy and of course other financing end of pipe waste treatment. It could be relevant to help development of service providers with incentives coming from those national programs dedicated to beneficiaries companies.	Access to finance for RECP
It is essential to promote and communicate on advantages for customer for resource efficient businesses or international trade. It could be developed by sectorial industrial association, technical centers or chamber of commerce in charge of promoting Morocco.	Customer demand for resource efficient businesses or international trade links

Starting Points indicated by the **Tunisian Team**

Relevant and feasible? Potential starting point? Priority for you? Please elaborate! All remarks welcome!	Leverage Point – potential starting point(s)
This will be needed to strike a balance with the existing policies focusing on EOP	Enabling policy framework for RECP
This continuous effort need to be reinforced to increase the offer side of CP services	Capacity and skills of service providers
To strengthen dedicated CP services	Products and services of service providers
Needed to increase the demand side for CP	Awareness raising and capacity building on the business case of sustainable manufacturing
Databases and mechanisms for technology transfer	Access to clean technologies
Always needed	Access to finance for RECP
Green sourcing and sustainable chain practice could be more efficient as it will influence the bottom line of companies	Customer demand for resource efficient businesses or international trade links
Strong market signal for CP	Another leverage point of interest/priority
CP as international standard requirement	Another leverage point of interest/priority
CP community of practice	Another leverage point of interest/priority

Starting Points indicated by the **Lebanese Team**

Relevant and feasible? Potential starting point? Priority for you? Please elaborate! All remarks welcome!	Leverage Point – potential starting point(s)
Very Relevant and priority. The concept of resource efficiency and cleaner production is mentioned in the Lebanese legislation but in a brief manner. For instance, MoE organizational decree No. 2275 issued in 2009 calls for the adoption of cleaner production and resource efficient and renewable technologies but without specifying how this can be done. The Environmental Protection law No. 444 dated 2002, stipulates provision of incentives to natural or legal persons adopting environmentally sound technologies or activities. The general legal framework and the compliance audit scheme designed by the MoE to assist industry to identify required investments to comply with environmental regulation do	Enabling policy framework for RECP

<p>not include specific requirements to promote adoption of Resource Efficiency and Cleaner Production (RECP). An elaborated policy framework for cleaner production and which takes into account the concept of integrated pollution prevention and control is needed.</p>	
<p>Very relevant and a good starting point. Most environmental and energy service providers have limited skills in fields of industrial resource efficiency and cleaner production. The role of the MEDTEST II project in RECP capacity building for service providers is crucial</p>	<p>Capacity and skills of service providers</p>
<p>Very relevant. A baseline of sustainable production services delivered to industry by local industrial service providers needs to be built. Also, a sort of certification scheme to service providers offering sustainable production services to industry would be important.</p>	<p>Products and services of service providers</p>
<p>Very relevant and it will build up on what has been achieved already in the country by the Lebanese cleaner production center</p>	<p>Awareness raising and capacity building on the business case of sustainable manufacturing</p>
<p>Very relevant particularly the new clean technologies that are not available in Lebanon. The SwitchMed networking component is important in this regard</p>	<p>Access to clean technologies</p>
<p>Very relevant and a priority. In Lebanon, soft loans with interest rate of around 0% and loan duration of around 10 years with 2-4 grace period exist thanks to the support and intervention of the central bank. These soft loans tackle energy and environmental projects. There is however a need to create a credit line specific to global resource efficiency and cleaner production for industrial companies that takes into account energy and non-energy matters in one loan. A cash-back system on RECP loans for industries for a certain period can facilitate implementation of RECP improvement measures by industrial companies. Other measures include 1) speeding administrative procedures to enable industries get RECP loans and 2) increasing loan ceiling for industrial companies so that it takes into account environmental/energy loans as well.</p>	<p>Access to finance for RECP</p>
<p>Very relevant The national action plan on sustainable consumption and production has been drafted with focus on industry. Having customers influence sustainable manufacturing has been addressed in this action plan. Awareness campaigns for customers would be needed in addition to appropriate policy tools including incentives</p>	<p>Customer demand for resource efficient businesses or international trade links</p>
<p>Market based incentives to encourage the adoption of sustainable production practices in industry would be needed (ex. tax reduction).</p>	<p>Another leverage point of interest/priority</p>

Starting Points indicated by the **Israeli Team**

Relevant and feasible? Potential starting point? Priority for you? Please elaborate! All remarks welcome!			Leverage Point – potential starting point(s)
From Ohad (consultant)	From Eran (consultant)	From Adi Dishon	
I believe the policy framework for Cleaner Production is a starting point but not an important leverage point	Relevant and feasible. Ministry of environmental protection is aware of benefits from resource efficiency and cleaner production methodologies. Governmental support of such programs (including subsidies of consultation costs that can be a leverage point).	Relevant and Feasible. Very important starting point. This is the right timing for it in Israel as there are many regulatory changes on this topic and if we don't insert RECP now, we'll miss the momentum.	Enabling policy framework for RECP
Capacity and skills of service providers – mainly maintenance is an important leverage point	Relevant and feasible. Weitz center is planning activities in this area, as starting point.	Relevant and Feasible. Very important starting point.	Capacity and skills of service providers
It is a leverage point but my opinion less important	Are you referring to tools used by service providers in area of RECP? Then yes, UNIDO tools are available and can be adopted for local use.	Relevant and Feasible. Leverage point to follow capacity building.	Products and services of service providers
A very important leverage point – the more case studies will have, the more awareness we'll see, and demand for similar projects	Relevant and feasible. Important starting point. Using business cases as benchmarking as selling tool of the methodology.	Relevant and Feasible. Very important starting point.	Awareness raising and capacity building on the business case of sustainable manufacturing
I believe this is a very powerful leverage point and starting point – new technologies for energy and water reduction during production are always important	For the most part, such technologies are available in Israel.	Relevant and Feasible. The technologies are there but the business case needs to be made for them. Hence Awareness raising and business case studies more important.	Access to clean technologies
I believe this is a very powerful leverage point and starting point. Finance for reduction projects, mainly related to new technologies is an important starting point	Priority. Some governmental incentives are available (policy framework will help). Additional sources needed further development.	Relevant and Feasible. Crucial leverage point, following the starting points of capacity building and raising awareness.	Access to finance for RECP
Although this is a very powerful leverage point, I believe this is a bit too early for the Israeli market in the next couple of years	The benefit of RECP is primarily for the company engaging in the process. This can produce indirect benefit.	Less relevant for Israel at this stage.	Customer demand
	Include additional stake holders: Include academy in educating future engineers in RECP methodologies.		Another leverage point of interest
	Add marketing benefits: Think of logo for companies to use on products or on publications indicating production using RECP methodologies.		Another leverage point of interest

10 Annex III – First Ideas from the Countries about Scaling Up

During September 2015, in preparation for the session on 30th October 2015 at the first SwitchMed Connect, CAPRESE was in contact with the participating country teams with the aim of tapping existing understanding regarding the concept of scaling up and what scaling up of MED TEST II activities would mean in their national contexts.

From these interviews, in discussing scaling up, the following points can be highlighted:

- First concentrate on one industry sector and get success stories, then transfer to others (*Palestine*)
- Increasing number/capacity of service providers, expanding to other regions, beyond Food & Beverage to diverse sectors consuming lots of energy, water, chemicals (*Lebanon, Egypt*)
- Taking a tool or concept and using it on a widespread basis beyond just a pilot run; expanding the tools to additional users, areas, industries, countries (*Israel*)
- Moving from MED TEST I to MED TEST II is an example of upscaling. So is working on an exit strategy from the start (*Tunisia*)
- Commercialisation of the results of MED TEST (*Morocco*)
- Seeing a positive change in behaviour, even small (*Algeria*)
- As long as international donors are in the picture, upscaling will not happen because the service providers' value in the marketplace is undervalued. We need to create demand for RECP services then be sure that the RECP services provided help companies in a way that is valued (*Morocco*)
- First, we need to build a good sustainable infrastructure regarding legislation, incentives, certification for service providers, etc., and then think about scaling-up (*Jordan*)

Emerging Questions

In the course of the conversations, several questions were posed, as follows:

- As 8 countries are involved, how can we work together? It's a large network!
- How can we be united in our approach; how can we work together with similar plans and procedures?
- What were the difficulties that have been encountered in implementation, and how did you overcome these?
- What are the lessons learned?
- What are the best practices at technical and policy levels?
- How to convince political stakeholders to be part of this project?
 - What are the main recommendations from each country for each other country?

11 Annex IV – Outcomes of October 2015 SwitchMed Connect Session

As mentioned in the previous section, during the SwitchMed Connect 2015 in Barcelona, a session was convened on 30th October 2015 which brought together the country teams to begin working on developing a shared understanding of ‘Scaling Up Pathways and Leverage Points for Sustainable Manufacturing’. There were about 100 participants in the session, including the National Focal Points, MED TEST II country coordinators and accompanying experts, key stakeholders such as Chambers of Industry, and representatives from funders, development agencies, and resource efficiency consultancies working in Mediterranean countries participated.

The session was facilitated using a World Café process which enabled this unexpectedly large group of participants to mix amongst the 8 country tables and exchange their ideas following three “expert” inputs and key questions designed to deepen reflection and tap relevant individual experiences and cases. The following key points have been extracted from all of the material that was reported back (contained in **Annex I**).

11.1 Factors for Developing a Market for RECP Services

Some of the key points that emerged in this discussion related to the need for improvements in the enabling framework (need for political stability, effective rules & regulations,) and governance systems (too much discretion, corruption).

The existence of subsidies is seen as an obstacle to the development of a market for RECP services. Lack of awareness regarding new technologies and the absence of systems within companies to collect information and manage knowledge were also mentioned.

Another interesting dimension is that too many service providers can be seen as an impediment to developing the market.

11.2 Business Models and Channels for Promoting Resource Efficiency

Participants were easily able to identify institutions (national and international) which could have a role or be a channel for service providers to sell or promote resource efficiency to SMEs.

The National Cleaner Production Centre (NCPC) was identified as a mechanism that is well-positioned to play a mediating role of amongst banks, clients, and service providers. In the case of Egypt, the ENCPC is seen as being able to provide a service to banks by helping in assessing the viability of resource efficiency projects that can qualify to getting loans. The ENCPC can create events and activities for connecting service providers and clients and can also help co-implement particular programs with service providers and acquire funding to finance projects.

The thinking regarding effective business models to sell and promote resource efficiency appears to be less developed. Perhaps some strengthening on this conceptual aspect is needed.

11.3 Relevant Industry Sectors for a Supply Chain Approach

There was common agreement that using a supply chain approach would be relevant for the Food & Beverage sector, where many opportunities are seen to decrease energy consumption, better

manage waste, and apply a circular economy approach. The textile sector was also seen as a candidate for applying supply chain thinking, given the pressure to enhance competitiveness (through improved resource efficiency) created by the export market. Iron, steel, cement, marble, electronics, agro food, chemicals were also mentioned.

Once identified, SwitchMed has offered some guidance with respect to thinking about how to strengthen leverage points. For example, the national teams are counselled to choose the leverage points on which to focus and analyse barriers and challenges to increase the leverage. For example, in the case of ‘service providers’:

- How can we strengthen and diversify the service mix of the service providers?
- Should we pursue revenue models for them?
- For which other services is there demand in the market?
- Should we focus on the policy framework or particular policy instruments as a leverage that can support scaling up of service provider activities?

Reporting from the Country Teams, following the Barcelona Session

Following the Barcelona session, the “hosts” for each country table were asked to report back on the discussions that took place. Only two country teams provided their feedback on the three questions that were addressed on 30 October 2015.

Question 1: What would be the recipe for the failure of the creation of a market for RECP services in your country (i.e. what ingredients, in which amounts, using which method) ?

Reported from Palestine Country Table	Reported from Egypt Country Table
<ul style="list-style-type: none"> ➤ High levels of discretion mixed with a little greed on the heat of corruption among government officials stirred by larger private sector members ➤ Short finance and closed doors of officials well mixed with low information in smaller private sector members and unclear laws and regulations of RECP services and markets ➤ Technical inefficiency mixed up with high levels of obsolete and centralized management spread over family businesses and small factories composing 98% of all sectors. ➤ Our industry is still infants. ➤ There is lack of regulation to protect IPR. ➤ Most of our enterprises are micro and small and family businesses, the change is not an easy issue for them. ➤ There is lack of create the awareness about the importance of such market. ➤ Also Obstacle of Active Parliament (Rules and Regulation) ➤ The emerging political instability may alter any opportunity for cooperation ➤ The economical fragile situation that makes investors and companies owners reluctant in pursuing an opportunity without being sure its financial impacts. 	<p><u>Ingredients</u></p> <ol style="list-style-type: none"> 1. Subsidies 2. Lack of awareness for new technologies. 3. No systems for information collection inside the companies. <p><u>In which amounts</u></p> <ol style="list-style-type: none"> 1. From Government side and now they start to decrease these subsidies. 2. Among large number of Egyptian Industry and Service Providers. 3. Among large number of Egyptian Industry. <p><u>Using which method</u></p> <ol style="list-style-type: none"> 1. Policy. 2. No updated systems. 3. Internal Policy for the Egyptian Industry.

Question 2: (Aside from ESCO), what other business models or institutions could be a channel for service providers to sell or promote resource efficiency to SMEs?

Reported from Palestine Country Table	Reported from Egypt Country Table
<ul style="list-style-type: none"> ➤ An official center of RECP that is established in each sector through unions and clusters of various industries. These should provide awareness and technical aid to SMEs in each sector in addition to representing them for RECP network ➤ An official national agency that sets policies and assures enforcement through incentivising achieving SMEs and penalizing those that don't meet the terms of RECP policies. ➤ Official R&D centers in academic bodies such as universities for technology transfer and best practices investigation to update and develop a pool of know-how and experts as well ➤ A RECP "network" that brings all the above mentioned entities together, to exchange, and communicate, make decisions, receive and send feedback, and have regular roundtable discussions to measure achievements based on the country policies and benchmarks ➤ Palestinian Electricity Transmission Ltd. Co. (PETL)- Government ➤ Development of "green mortgage "funds ➤ New investments in renewable energy. ➤ To promote resource efficiency to SMEs many government and private institution could do that, like: Ministry of National Economy, EQA, Energy Authority ,etc. 	<p>Egypt National Cleaner Production Center (ENCPC) could be a channel for service providers to sell or promote resource efficiency to SMEs but under supervision of United Nation for Industrial Development Organization (UNIDO), especially the financial issues.</p> <p>A major business model that can help facilitate selling or promoting resource efficiency to SMEs is making resource efficiency improvement projects bankable. The major problem is that banks cannot decide upon the feasibility of such projects easily. One measure is that the government could guarantee such projects. Another route is that banks can be trained to assess such projects, or at minimum their awareness about the resource efficiency projects can be raised.</p> <p>A major problem with the ESCO model in Egypt, which I have to raise a flag about, is that it is very difficult for service providers to guarantee and regulate the payments of the industry over long time. In addition, variation in production which changes resource consumption is sometimes difficult to distinguish from improved specific resource consumption (per unit product) due to reservations of the factories in sharing their data transparently along extended periods of time with the service provider. A variation of ESCOs could succeed in Egypt using the following mechanism. The service provider could couple their service with supervision on implementation. A technical and financial project is developed by the service provider and is endorsed by the client. The service provider can arrange directly with preferred bank to finance the project paying for both the cost of equipment and services. The client then pays directly to the bank over an extended period. The profit is shared between the bank and the service provider. It is much easier for the bank to collect the payment and to qualify one service provider to benefit from this service rather than having to assess each project individually. In that sense, it is the service provider quality that became bankable. The government can certify service providers who can propose these projects to the banks. These mechanisms already exist in Egypt in other industries.</p> <p>ENCPC is highly qualified to play a role of a mediator between banks, clients, and service providers. It can provide a service to banks by helping in assessing the viability of resource efficiency projects that can qualify to getting loans. ENCPC can create events and activities for connecting service providers and clients. ENCPC can also help co-implement particular programs with service providers and acquire funding to finance projects.</p>

Question 3: In your country, which industry sector would be the most effective for using the supply chain approach as a leverage point, and why?

Reported from Palestine Country Table	Reported from Egypt Country Table
<ul style="list-style-type: none"> ➤ Agro food ➤ The food and beverage, and the marble and stone sectors. These sectors are the most prosperous nowadays in Palestine and have the largest entities causing the largest effects to environment. In addition, both sectors are eligible for using the supply chain approach where both sectors are eligible for the circular production line system. Hence, it will be worthy carrying on a thorough study of both sectors for this purpose. 	<ol style="list-style-type: none"> 1. Food and beverages (due to the high growth rate to meet an increasing population needs, also the industry is quite old and thus may benefit from energy efficiency measures). Many opportunities exist in managing waste, decreasing energy consumption, and treating waste water. 2. Textiles (major sector with long history in Egypt, big export market thus pressured to become more competitive, which in turn could mean better resource efficiency) 3. Iron and Steel + Cement due to high consumption and large economic value of waste 4. Chemical industries (mainly due to diversity of industries within) 5. Electronic Sector. <p><u>Why?</u></p> <ul style="list-style-type: none"> • Those are some of the largest sectors in Egypt. • They have very good potential for saving. • They need further control. • Food and beverages, textiles, and chemical industries combined exceeds 30% of the Industrial sector economic production

Other Comments

Reported from Palestine Country Table	Reported from Egypt Country Table
<ul style="list-style-type: none"> ➤ I think that better knowledge sharing channels among the 8 countries will benefit all teams through lessons learned sharing and experts mobility among teams. ➤ The importance of technology transfer and adoption; ➤ Economic, financial, technical and institutional is very important to Sustainability ➤ Sharing knowledge and experiences is a powerful tool ➤ The important of awareness and building the national capacity. 	<ul style="list-style-type: none"> ➤ Having a certain unit to be responsible for RECP up-scaling pathways and leverage points across the 8 participating countries and also responsible for implementing their activities in RECP services. ➤ Review of successful experiences world-wide and the 8 countries in finance mechanisms and business models ➤ An estimate of the available potential (market size) for resource efficiency ➤ SWOT analysis of implementing resource efficiency projects in the 8 countries