

Guidance on Technology Action Plans - TAP

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Process of preparing updated TAP guidance

- Guidance on enhanced implementation of TNA results
 - Interim report TEC
- Updated guidance on Technology Action Plans
 - Tested at TNA regional training workshops
- Contributors:
 - UNEP DTU Partnership
 - CTCN
 - TEC TNA Force
 - Members of the TEC
 - UNFCCC secretariat





TNA step1

• Identification and prioritisation of technologies for mitigation and adaptation

- Identify national priority sectors and technologies
- Assess technologies through multi criteria analysis against national development priorities, potential for GHG reduction or vulnerability reduction, costs and benefits, etc.

TNA step 2

Barrier analysis and enabling framework (BAEF)

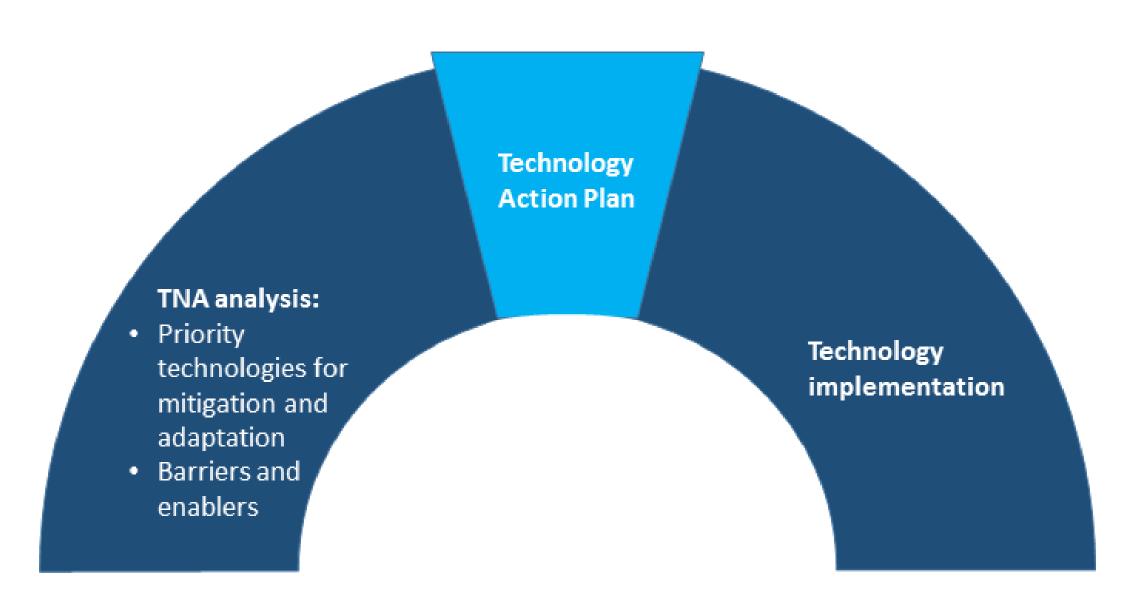
- Identification and analysis of legal, institutional, financial, social, economic and other barriers
- Identification and analysis of policies and other measures for improving enabling frameworks
- Economic assessment of measures to transfer and diffuse prioritized technologies

TNA step 3

• Technology Action Plan (TAP)

- Identification and description of required actions for inclusion in TAP
- Identification of activities needed to make implementation of actions work
- Elaboration of activities: timing, resources, responsible parties, etc.







Steps for preparing a Technology Action Plan

Purpose of revised TAP guidance:

Identify a reasonable set of Actions and Activities for implementation of prioritised technologies for mitigation and adaptation

- Step 1 Ambition for the TAP
- Step 2 Identify Actions and detailed Activities to include in the TAP
- Step 3 Identify stakeholders and determine timelines
- Step 4 Determine capacity needs and estimate costs and funding needs
- Step 5 Management planning (risk and contingency planning)



Step1 Ambition for the TAP

Step 2

Actions and activities for the TAP

Step 3

Identify stakeholders and determine timelines

Step 4

Capacity needs and Cost estimates

Step 5

Management planning













Proposed scale of technology transfer

- **2.1** Summary of measures to overcome technology barriers
- 2.2 Select Actions for TAP
- **2.3** Identify Activities to implement Actions

- **3.1** Identify stakeholders for TAP implementation
- 3.2 Schedule Actions and **Activities**

- **4.1** Capacity building requirements for implmentation of TAP
- **4.2** Estimating costs of Actions and **Activities**
- 5.1 Risks and contingency planning
- **5.2** Next steps



Step 1 - Ambition

- This step covers: a determination of the scale and context for technology deployment and diffusion ("ambition).
- Proposed **scale** of technology implementation in country to deliver the socio-economic and environmental **benefits** in the country sector or area (as identified during technology prioritization stage of TNA)
 - For example: "Priority technology involving small-scale hydroelectricity will be implemented on a scale of up to 20 projects of various sizes totalling 120 MW and producing MW-hours of renewable energy yearly."



Step 2 – Identify Actions and Activities for TAP

- Summarise barriers and measures from earlier TNA steps
- Select measures to be included as Actions in TAP
 - Including too many actions may complicate TAP implementation
- Identify **Activities** for implementation of selected actions
 - things that need to be done to make an Action work

	Action 3: Improve Policy and Enabling Environment
Activity 3.1	Draft and adopt legislation including appliance labeling and regulatory fitness and performance
Activity 3.2	Adopt fast-track, one-stop approval process
Activity 3.3	Host high level: "market opening workshop"
Activity 3.4	Other identified policy and enabling environment activities



Step 3 – Stakeholders and Timelines

- Identification of stakeholders for the implementation of the TAP
 - Institution with primary responsibility for an Action and Activities
 - 'Secondary' responsibility
 - Organise activities among stakeholders in the public and private sector
- Scheduling and sequencing of specific activities
 - Sequence of activities
 - Availability of technology
 - Nature of actions and activities (e.g. infrastructure support, supply line for market good)
 - Programme or project



Step 4 – Capacity, costs and funding

Capacity building needs:

- Awareness of work that needs to be accomplished in the time ahead
- Skills
- Cost estimates
 - Sufficiently informative, but reasonably pragmatic
 - Differentiate cost items for finding suitable ways of funding

• 2 types of cost items

- 1. Costs related to **preparation** activities
- 2. Costs related to implementation of products and infrastructure
- Support for determining funding needs for each cost item



Step 4 cont. – Estimating Costs - example

- Prioritised technology for which TAP is made:
 - Solar Home Systems
- Identified Action:
 - Infrastructure improvement
- Identified Activities:
 - Preparation of Action by in-house staff and consultants (Type 1 cost)
 - Construction of infrastructure for diffusion of SHS (Type 2 cost)



Step 4 cont. – Estimating Costs - example

Type 1 costs – Preparation activity

Persons working on it * No. hours at work * Hourly rate + meetings & logistics
 + Contingency % = cost figure

Type 2 costs – Infrastructure

- Scale of activity
- Construction costs (can be based on generally available (online) data)
- Development costs and interest rates
- Potential revenues -> Internal Rate of Return or Ability to Pay

Specification of different cost types/needs helps identify suitable funding: grants, loans, investment, cost-sharing, revenues from goods/services provided



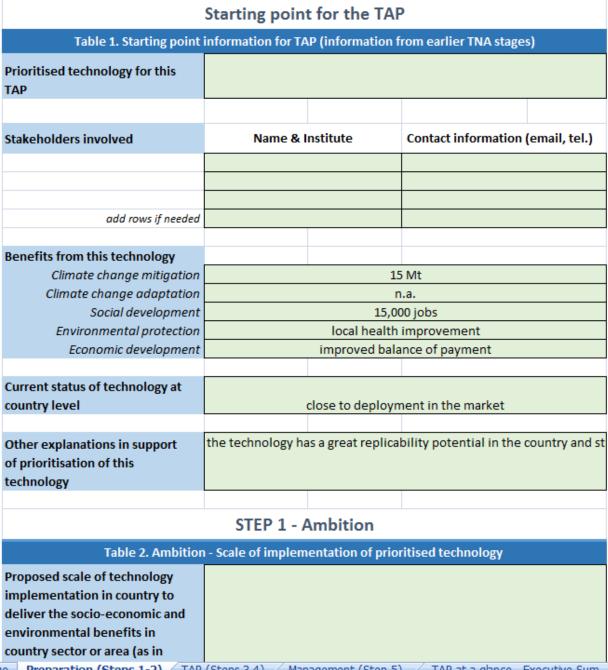
Step 5 – Management planning

- Risks and contingency planning
 - Identify possible risks per action/activity: costs, scheduling, etc.
 - Rationalise risks at the level of the TAP
 - Protocol for spotting deviation between plan and performance
- Next steps:
 - Immediate requirements
 - Critical steps



Reporting – the TAP

- Templates in Spreadsheet "TAP Reporting Tables"
- These tables together form the TAP
- Support for calculating:
 - Type 1 and Type 2 costs, and
 - Internal rates of return and "Ability to pay"
- Executive summary "TAP at a glance"





Title page | Preparation (Steps 1-2) | TAP (Steps 3-4) | Management (Step 5) | TAP at a glance - Executive Sum

Table 4. Framework fo	or ranking measures	s for inclusion as Actions in TAP (Step 2	2.2)
Measures to overcome barriers	Considerations	Assessment	Ranking
	Cost-	7 ISSESSITE II	- Turning
1 <add 3="" from="" measure="" table=""></add>	effectiveness		
	Efficiency		1
	Interactions with		1
	other measures		
	Suitability		1
	Benefits & costs		
	Cost-		
2 <add 3="" from="" measure="" table=""></add>	effectiveness		
	Efficiency]
	Interactions with		1
	other measures		
	Suitability		
	Benefits & costs		1
	Cost-		
2 <add 3="" from="" measure="" table=""></add>	effectiveness		
	Efficiency		1
	Interactions with		1
	other measures		
	Suitability]
	Benefits & costs		1
4 <add 3="" from="" measure="" table=""></add>	Cost- effectiveness		
	Efficiency		1
	Interactions with		1
	other measures		
	Suitability		1
	Benefits & costs		1
	Cost-		
5 <add 3="" from="" measure="" table=""></add>	effectiveness		
	Efficiency		
	Interactions with		
	other measures		
	Suitability		







STEP 4 - Est	timate ca	pacity a	and fund	ling needs	S						
		Table 7.	Planning t	able - charac	terisation of	activities fo	or impleme	entation of a	ctions		
Action 1:					Infrast	ructure develo	opment				
Activities	Planning (Step 3 & 4.1)				lmį	olementation	n (Step 3 & 4	1.1)	Costs and funding needs (Step 4.2)		
	Start (Step 3)	Complete (Step 3)	Who (Step 3)	Capacity needs (Step 4.1)	Start (Step 3)	Complete (Step 3)	Who (Step 3)	Capacity needs (Step 4.1)	Costs (Step 4.2)	Who will fund (Step 4.3)	
Investment in new infrastructure	2016	2017	Min Finance	training	2018	2029	Env. Agency	technical support	1.500.000	ADB	
0											
0											
0											
Action 2:				Er	ngineer trainin	g to operate	new techno	ology			
Activities		Planning (Step 3 & 4.1)	lmp	olementation	n (Step 3 & 4	1.1)	Costs and funding needs (Step 4.2)		
	Start (Step 3)	Complete (Step 3)	Who (Step 3)	Capacity needs (Step 4.1)	Start (Step 3)	Complete (Step 3)	Who (Step 3)	Capacity needs (Step 4.1)	Costs (Step 4.2)	Who will fund (Step 4.3)	
Develop new curiculum for engineer education programmes	2016	2016	Ministry Educatoin	training material	2019	2025	Ministry Education Universiti es	facilities MRV tools	5.500.000	donor country Y	
0											
0											
0											
0											
Action 3:						0					

Klik hier om een voettekst toe te voegen



Type 2 Cost estimates (Section 4)

Actions for market-based technologies involving products or service (see next item for Infrastructure)

		СО	ST MATE	XIX		
Unit	US\$	US\$	US\$	US\$	US\$	
Costs	Cost 1	Cost 2	Cost 3	Cost 4	Cost 5	
Variable Name	Capital	Cost of Products or Services	Cost of Sales and Administrati on	Other Costs		Total Annual Costs (US\$)
Year 1	1000	50	15			1065,00
Year 2		50	15			65,00
Year 3		50	15			65,00
Year 4		50	15			65,00
Year 5		50	15			65,00
Year 6		50	15			65,00
Year 7		50	15			65,00
Year 8		50	15			65,00
Year 9		50	15			65,00
Year 10		50	15			65,00
Year 11		50	15			65,00
Year 12		50	15			65,00
Year 13		50	15			65,00
Year 14		50	15			65,00
Year 15		50	15			65,00
Year 16		50	15			65,00
Year 17		50	15			65,00
Year 18		50	15			65,00
Year 19		50	15			65,00
Year 20		50	15			65,00
	1000	1000	300	0	0	2300

Unit	US\$	US\$	US\$	US\$	US\$	
	Revenue 1	Revenue 2	Devenue 3	Devenue /	Revenue 5	
	Kevende 1	Kevenue 2	Keveride 5	Neveride 4	3	
Revenues	products sale					Total Annual Revenues (US\$)
Year 1	150					150,00
Year 2	150					150,00
Year 3	150					150,00
Year 4	150					150,00
Year 5	150					150,00
Year 6	150					150,00
Year 7	150					150,00
Year 8	150					150,00
Year 9	150					150,00
Year 10	150					150,00
Year 11	150					150,00
Year 12	150					150,00
Year 13	150					150,00
Year 14	150					150,00
Year 15	150					150,00
Year 16	150					150,00
Year 17	150					150,00
Year 18	150					150,00
Year 19	150					150,00
Year 20	150					150,00



Internal	rate of return	6%							
		Deficit (Mir	ius) or S	Surplus	by Yea	r (Minus=	Funding	Neede	d)
	Operating Revenues Minus Costs by Year	Amount by Yea	Commen	ts:					
year 1	-915,00	-915,00	Will inve	st 50% of	capital a	nd seek lo	an at 4% ir	nterest rat	e
year 2	85,00	85,00	Surplus v	vill be us	ed to rep	ay loans ar	nd investor	rs	
year 3	85,00	85,00							
year 4	85,00	85,00							
year 5	85,00	85,00							
year 6	85,00	85,00							
year 7	85,00	85,00							
year 8	85,00	85,00							
year 9	85,00	85,00							
year 10	85,00	85,00							
year 11	85,00	85,00							
year 12	85,00	85,00							
year 13	85,00	85,00							
year 14	85,00	85,00							
year 15	85,00	85,00							
year 16	85,00	85,00							
year 17	85,00	85,00							
year 18	85,00	85,00							
year 19	85,00	85,00							
year 20	85,00	85,00							
	700,00	700,00							

Executive	Summary -	TAP at	a glance							
Table 9. TAP S	ummary overv	iew								
	,									
Sector				<t< td=""><td>o be added fro</td><td>om earlier TN</td><td>A stages></td><td></td><td></td><td></td></t<>	o be added fro	om earlier TN	A stages>			
Sector	<to added="" be="" earlier="" from="" stages="" tna=""></to>									
Technology	0									
Ambition	0									
Benefits	Climate change r	nitigation	15 Mt							
	Climate change a	daptation	n.a.							
	Social developme	ent	15,000 jobs							
	Environmental pr	rotection	local health imp	rovement						
	Economic develo	pment	improved balan	ce of payment						
Action	Activities to	Responsi		Time f		Capacity	/ needs	Cost summary	Sources of Funding	Risks
	support Action	body and f point preparat	point	start preparation	complete implemen- tation	preparation	implemen- tation			<summarise from<br="">Step 5, Table 8></summarise>
Infrastructure	Investment in	point	point implemen- tation		implemen-	preparation	tation technical	1500000	ADB	
Infrastructure development		point preparat	point implemen- tation	preparation	implemen- tation		tation	1500000	ADB	
	Investment in new	point preparat	point implemen- tation	preparation	implemen- tation		tation technical	1500000	ADB 0	
	Investment in new infrastructure	point preparat Min Fina	point implementation nce Env. Agency	preparation 2016	implemen- tation	training	tation technical support			
	Investment in new infrastructure	point preparat Min Fina 0	point implementation Env. Agency	preparation 2016	implementation 2029	training 0	technical support	0	0	
	Investment in new infrastructure 0	point preparati	point implementation nce Env. Agency 0 0	2016 0 0	implementation 2029 0 0	training 0 0	technical support	0 0	0	
	Investment in new infrastructure 0 0 0	point preparati	point implementation Conce Env. Agency O O O	2016 0 0 0	implementation 2029 0 0 0	training 0 0 0	technical support 0 0 0	0 0 0	0 0 0	
	Investment in new infrastructure 0 0 0	point preparati	point implementation nce Env. Agency 0 0 0 0 0 0 Ministry	2016 0 0 0	implementation 2029 0 0 0	training 0 0 0	technical support 0 0 0	0 0 0	0 0 0	
Engineer training to	Investment in new infrastructure 0 0 0 0 O O O O O O O O O O O O O O O	point preparati	point implementation nce Env. Agency 0 0 0 0 0 Ministry Education	2016 0 0 0	implementation 2029 0 0 0	training 0 0 0 0	tation technical support 0 0 0	0 0 0	0 0 0	
Engineer training to operate new	Investment in new infrastructure 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	point preparati	point implementation nce Env. Agency 0 0 0 0 0 Ministry Education	2016 0 0 0 0	implementation 2029 0 0 0 0	training 0 0 0 0 training	tation technical support 0 0 0 0 facilities	0 0 0 0	0 0 0 0	





Thank you!