diffusion of high yielding variety (HYV) and genetically modified (GM) variety developed by private sector	advanced farming technologies and inputs	Agriculture, Ministry of Environment			in accessing high quality inputs research tools and technology
Laws and strategy to monitor private sector business in seed and other inputs services	To ensure supply of farmer's friendly , environmentally feasible and affordable technology by the private sector	Ministry of Agriculture, DAE	2013-2017	30	Developed policy to regulate private sector involvement in agriculture sector

1.4.1.3. Technology action plan for short maturing rice variety

a) Aggregation and grouping of identified measures

Following identification of measures in the stakeholders' consultation workshop, the identified measures have been grouped under broader strategic measures presented in the table below;

Table 25: Grouping of measures under broader criteria

Technology	Strategic measures	Specific measure	Timeline	
			Short Term (1-5 years)	Long Term 1-10 years
Short maturing rice variety	Investment	Making detail cost estimation for development, transfer and diffusion of short maturing rice crop variety	√	
		Reviewing and increasing budgetary allocation for agricultural research for the development of climate change resilient rice crop variety	√	
		Making a sector- and technology-specific proposal and generating funds from the development partners and other international adaptation funding sources	√	
		Providing subsidy to the price of the input services e.g. seed, irrigation	√	

		etc. for transfer and diffusion of the short maturing rice variety.		
	Capacity development	Reviewing technical and institutional capacities of the existing public sector rice research institutions	√	
		Developing of a comprehensive action plan for technical and institutional capacity building of the rice research institutions	√	
		Strengthening capacity of the seed certification authority so that only the quality seeds and easily adaptable farming technologies reach to the farmers		√
		Training and capacity building of the experts of the research organizations for the development of resilient rice varieties e.g. short maturing rice varieties	√	
		Strengthening capacity of the monitoring and evaluation wing of the agriculture sector to monitor the effectiveness of the new technology and farming practices		√
		Developing of biological database e.g. genetic bank of local indigenous economic crops that can be used for developing new varieties.		√
	Organizational/ behavioral change	Creating network of experts and generate updated knowledge on the development of high yielding variety	√	
		Creating a network among research organization, academic institutions and NGOs to remove misunderstanding about high yielding variety (HYV) and genetically modified (GM) variety	√	
		Ensuring suitability testing of the imported or the newly developed varieties	√	
	Policy/ Law	Waiving IPR fees for transfer and diffusion of high yielding variety (HYV) and genetically modified (GM) variety developed by private sector		√
		Laws and strategy to monitor private sector business in seed and other inputs services	√	

b) Technology Action Plan

Table 26 : Technology action plan for short maturing rice variety

Sector: Agriculture					
Specific technology: Short maturing rice variety					
Measures (Grouped under broader category)	Importance of the measure	Implementing agency	Timescale	Cost for the measures/ Unit ('000 USD)	Monitoring, Reporting and verification for measure
	1	**2**	**3**	**4**	**5**
Investment					
Making detail cost estimation for development, transfer and diffusion of short maturing rice variety	To help policy makers and investors to have a clear idea on investment requirement for the implementation of the technology.	Ministry of Agriculture, Department of Agriculture Extension (DAE), Bangladesh Agriculture Research Council (BARC)	2013-2017	300	Readily available detail cost estimation for the policy makers and investors for development, transfer and diffusion of salinity tolerant rice variety
Reviewing and increasing budgetary allocation for agricultural research for the development of climate change resilient rice crop variety	To ensure immediate and need based finance for agricultural research from the Annual Development Programme (ADP).	Ministry of Agriculture, Ministry of Finance	2013-2017	50	Increased agriculture sector budgetary allocation from ADP
Providing subsidy to the price of the input services e.g. seed, irrigation etc. for transfer and	To overcome financial barriers and to encourage farmers to apply this technology	Ministry of Agriculture, Ministry of	2013-2017	100	Increased farmer's accessibility and affordability to the

diffusion of the short maturing rice variety.		Finance			agricultural input services
Making a sector and technology specific proposal and generating funds from the development partners and other international adaptation funding sources	To get immediate and long-term funds from international sources.	Ministry of Agriculture, DAE, BARC	2013-2017	40	Communicated technology specific proposal to the development partners
Capacity development					
Reviewing technical and institutional capacities of the existing public sector rice research institutions urban drainage system	To identify technical and institutional capacity gaps of the existing institutions	Ministry of Agriculture,	2013-2017	30	Identified technical and institutional capacity gaps of the rice research institutions
Developing of a comprehensive action plan for technical and institutional capacity building of the rice research institutions	To help policy makers and other stakeholders to prioritize actions and make investment decision on the priority action. This also will maximize potentials of the respective organizations.	Ministry of Agriculture, Bangladesh Rice Research Institute (BRRI) DAE, BARC	2013-2017	50	Readily available comprehensive action plan for capacity building of the rice research institutions
Strengthening capacity of the seed certification authority so that only the quality seeds and easily adaptable farming technologies reach to the farmers	To ensure supply of quality seed and technology specific appropriate farming technology to the farmers	Ministry of Agriculture, DAE	2013-2023	40	Ensured supply of quality seeds and other inputs and dissemination of appropriate technologies to the farmers level
Training and capacity building of the experts of the research organizations for the development of resilient rice varieties e.g.	To ensure capacity of local experts. It also will reduce cost for hiring international experts.	DAE, BARC, Soil Research and Development	2013-2017	60	Research organizations are staffed with skilled and expert human

drought tolerant rice varieties		Institute(SRDI), Bangladesh Institute of Nuclear Agriculture (BINA)			resource
Strengthening capacity of the monitoring and evaluation wing of the agriculture sector to monitor the effectiveness of the new technology and farming practices	To upscale the technology on the basis of field based result	DAE, BARC, Soil Research and Development Institute(SRDI), Bangladesh Institute of Nuclear Agriculture (BINA)	2013-2017	250	Developed and institutional capacity mechanism for effectiveness of the new technology
Developing of biological database e.g. genetic bank of local indigenous economic crops that can be used for developing new varieties.	To make use of high-quality properties of the indigenous varieties in the development of new ones.	DAE, BARC, Soil Research and Development Institute(SRDI), Bangladesh Institute of Nuclear Agriculture (BINA)	2013-2023	150	Developed new variety through hybridization with the indigenous one.
Organizational/ behavioral change					
Creating network of experts and generate updated knowledge on the development of high yielding variety	To learn and enhance understanding and knowledge on the technology	DAE, BARC, SRDI, BINA, BRRI	2013-2017	30	Increased sharing of information, knowledge and tools for the development

					of climate resilient high yielding rice variety
Creating a network among research organization, academic institutions and NGOs to remove misunderstanding about high yielding variety (HYV) and genetically modified (GM) variety	To increase acceptability of the high yielding variety (HYV) and genetically modified (GM) variety by the farmers and other stakeholders	DAE, BARC, BRRI, NGOs, Private Sector	2013-2017	35	Increased acceptance of the high yielding variety (HYV) and genetically modified (GM) variety by the farmers and other stakeholders
Ensuring suitability testing of the imported or the newly developed varieties	To ensure supply of only quality seeds and appropriate farming technology to the farmer.	Ministry of Agriculture, DAE, BARC,	2013-2017	20	Institutions in place to ensure supply and dissemination of quality seeds and appropriate farming technology to the farmer.
Policy/ Law					
Waiving IPR fees for transfer and diffusion of high yielding variety (HYV) and genetically modified (GM) variety developed by private sector	To have free access to the advanced farming technologies and inputs	Ministry of Agriculture, Ministry of Environment	2013-2023	40	Removed IPR barriers in accessing high quality inputs research tools and technology
Introducing Laws and strategy to monitor private sector business in seed and other inputs services	To ensure supply of farmer's friendly , environmentally feasible and affordable technology by the private sector	Ministry of Agriculture,	2013-2017	30	Developed policy to regulate private sector involvement in agriculture sector