

Adaptation Options for coastal areas – Identification and Validation in 4 Stages

Dacope Upazila, Khulna

Sl #	Recommended by community from Situation Assessment		Recommended from 1 st UTIWG	Recommended from NTIWG for Kharif-II	Final recommendation from UTIWG/UDMC for Kharif-II
	Farmers current practice	Recommended as new			
1	Adaptation Options for Agriculture/crop sector				
1.1			T. Aman Cultivation; (BR23, 40, 41, 44, Binadhan) (Local-Kachra, Nonakochi, Chini Atop, Benapole, Jota Balam)	Cultivation of local saline tolerant late T. Aaman and BR23 rice variety	Cultivation of local saline tolerant late T. Aman and BR23 rice variety
1.2	Homestead gardening (Year Round)		Homestead Vegetables Cultivation; BARI Kolapara Model; Bitter gourd, Snake gourd, Ribbed gourd, Ash gourd, Bottle gourd, Okra, Indian Spinach, Stem Amaranth, Egg Plant	Homestead gardening	Homestead gardening
1.3			Vegetable Cultivation at the Boundary of Shrimp/Prawn Field (Gher); Bitter gourd, Kang Kong, Cucumber, Papaya and others		
1.4	Wheat, Barly, Pusle, mustard, watermelon and maize cultivation instead of sesame (Rabi and Kharif-I)				
1.5		Zero tillage potato cultivation (Rabi)			
1.6		Zero tillage maize cultivation (Rabi)			
1.7		Relay cropping of grass			

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		pea and mustard with T. Aman (Rabi)			
1.8		T. Aman-Water melon-Aus pattern (Year Round)			
1.9		Cultivation of green manuring crops (Rabi)			
1.10				Boat garden (Kharif-II)	
1.11	Grafting of Jujube (Kharif-I)				Jujube (BAU, Apple, Narkeli) gardening
1.12		Farm yard manure (Year Round)			
1.13			Mini pond (Year Round)		
2	Adaptation Options for Fisheries sector				
2.1		Rice cum fish (T. Aman with Telapia & Thai puti) culture (Kharif-II)		Rice cum fish culture	Rice cum fish culture
2.2	Indigenous fish culture in pond such (Koi, shing, Rui, Katla etc (Year Round)				
2.3	Prawn (golda) culture in low land/ T. Aman rice field (Kharif-II)				
2.4		Duck cum fish culture		Duck cum fish culture	
3	Adaptation Options for Livestock sector				
3.1		Napiar and Para grass production in homestead area (YR)		Para/Napiar grass production	Para/Napiar/German grass production
4	Adaptation Options for Forestry sector				
4.1		Nursery establishment (YR)			Nursery establishment
4.2		Plantation of chambal			

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		and shirish in the roadside			
4.3		Plantation of coconut, betel nut, neem and jujube in homestead area(Kharif-I)			
5	Adaptation Options for Structural sector				
5.1		Establishment of sallow tube- well (Year Round)			

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Terokhada Upazila, Khulna

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	Farmers current practice	Recommended as new			
1	Adaptation Options for Agriculture/crop sector				
1.1	Cultivation of saline tolerant T. Aman rice varieties		Cultivation of BR40, 41	Cultivation of BR41 and local variety	BR – 41 cultivation and compare with Local T- aman rice
1.2	Rice cultivation through ring bari methods applied				
1.3	Local T- aman cultivation in deep water				
1.4	T. Aman- pulse-Aus cropping pattern				T- Aman- pulse-Aus cropping pattern
1.5			Cultivation of Boro (BR28, 29)		
1.6			Cultivation of Local Aus (Kharif-I)		
1.7			Cultivation of Pulse, Oil, Spices Crops		
1.8	Cultivation of Sesame, tishi		Cultivation of Sesame, Mung Bean		
1.9	High yielding wheat/maize cultivation				
1.10				Homestead vegetable cultivation	Homestead vegetable cultivation
1.11			Cultivation of vegetables in the field		
1.12	Guava/Lemon/ mango/Jujube cultivation		Mixed Fruit Garden		Mixed fruit gardening established (guava/lemon/mango/jujube)

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	Farmers current practice	Recommended as new			
1.13			Cultivation of BAU/Apple Kul	Jujube (Apple Kul) garden	
1.14			Cultivation of Guava (Kazi variety)		Cultivation of Guava (Kazi, BARI variety)
1.15			Cultivation of Pigeon Pea (Arahar) in the Fallow Land		
1.16	2-Chamber FYM preparat		Farm Yard Manure		
1.17	Pit excavation in the corner side of boro rice field for the irrigation				2-Chamber FYM preparation
2	Adaptation Options for Fisheries sector				
2.1	Fish cultivation with T. Aman rice.		Rice-white fish cultivation		Rice (T. Aman)-white fish cultivation
2.2			Fish Cultivation in the Water Logged Field using Bamboo Mat (Pata) Method	Pata (Compartmentalization by bamboo mat in stagnant water) fish cultivation	Pata (Compartmentalization by bamboo mat in stagnant water) fish cultivation
2.3					Small pond Fish breeding practices
2.4			Fish and Duck Rearing together	Small scale duck cum fish culture	Small scale duck cum fish culture
2.5	Shrimp cultivation (Follow modern technology suggested by FRI)				
2.6	Snail Cultivation in water lodged area				
3	Adaptation Options for Livestock sector				
3.1			Fodder Cultivation	Production of fodder (Para and Napier grass)	Production of fodder (Para and Napier grass)
3.2					Goat rearing

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	Farmers current practice	Recommended as new			
4	Adaptation Options for Forestry sector				
4.1			Nursery Establishment		Nursery Establishment
4.2					Wood and fruit tree plantation in the homestead
4.3	Coconut/pum/betel nut cultivation				Coconut/pum/betel nut plantation

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Bhandaria Upazila, Pirojpur

SI #	Recommended by community from Situation Assessment		Recommended from 1 st UTIWG	Recommended from NTIWG for Kharif-II	Final recommendation from UTIWG/UDMC for Kharif-II
	Farmers current practice	Recommended as new			
1	Adaptation Options for Agriculture/crop sector				
1.1	Cultivate early but long variety of T. Aman		Cultivation of Local Long Variety of Aman (Lalmota, Dudhkalam, Motadhan, Kholni, Dalkachu, Joyna) (Kharif-II)	Cultivation T. Aman (BR23, BR41 and 2 local varieties)	Cultivation T. Aman (BR 23, 41, lalmota & sadamota)
1.2			Cultivate HYV rice by the month of Agrahayan and Poush		
1.3		Saline tolerant Boro rice cultivation	Cultivation of saline tolerant variety of boro rice	Cultivation of Bridhan47in the boro season	
1.4	Saline tolerant Aus rice cultivation		Cultivate saline tolerant rice; BR23, BR25, Brihan40 and 41, Local varieties (Dudhkalam, Mala, Mukta) (Kharif-I)		
1.5			Cultivation of Mung, Lentil, Mustard		
1.6	Cultivate rabi crops in the aile/bund of crop fields		Cultivate vegetables in the high and saline free land		
1.7	Saline tolerant rabi crops cultivation		Cultivate saline tolerant maize, chick pea and other crops		
1.8		Cultivate long HYV vegetables that requires less management	Cultivation of pest resistant crops, follow IPM		
1.9		Cultivate drought tolerant	Cultivation of drought		

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	Farmers current practice	Recommended as new			
		rabi crops	tolerant crops		
1.10		Prepare T. Aus seedbed in high lands	Raise seedbed in the high land		
1.11		Increase organic manure use preparing from water hyacinth	Compost preparation		
1.12	Cultivate vegetables in the raised homestead area and/or by Sorjan method			Homestead vegetable cultivation	Homestead vegetable gardens
1.13		Make floating seedbed			
1.14		Use recommended dose of organic and chemical fertilizers along with supplemental irrigation to reduce soil salinity			
1.15			Excavation of mini pond for preservation of rain water for subsequent irrigation		
2	Adaptation Options for Fisheries sector				
2.1			Rice-fish cultivation through group approach	Rice-fish cultivation with local rice variety	Rice--fish culture <ul style="list-style-type: none"> ▶ Rice-- Fingerlings culture ▶ Rice--sing/magur culture ▶ Rice—Carp fish culture
2.2		Cultivate salt tolerant fishes (Bagda, faisal, patary)	Cultivate saline tolerant fish		
2.3				Small scale duck cum fish culture	Duck-fish culture

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	Farmers current practice	Recommended as new			
2.4		Raise pond side and use net if necessary	Protecting fish by putting-up fence/net around the pond		
3	Adaptation Options for Livestock sector				
3.1		Cultivate german, napier & para grass in high lands		Production of fodder (Para and Napier grass)	Fodder cultivation (Napier & Para grass)
3.2		Preserve locally available fodder			
4	Adaptation Options for Forestry sector				
4.1	Establish nursery in the raised/high lands		Nursery establishment		Nursery establishment
4.2	Plantation of betel leaf and banana in the high land improving drainage system				
4.3	Cultivate salt tolerant fruit and forest trees (coconut, palm tree, betel nut & keora)				
4.4	Transplant trees along river embankments and cross dams				
5	Adaptation Options for Structural sector				
5.1	Harvest rain water in the ponds and canals and cultivate fresh water fishes		Re-excavation of traditional canal and preserving fresh/sweet water in the canal for subsequent irrigation		
5.2			Establishment/maintenance of embankment and sluice gate for preservation of		

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	Farmers current practice	Recommended as new			
			fresh/sweet water		
5.3		Establish embankments and sluice gate to protect crops from saline and tide water intrusion	Establishment of embankment to restrict saline water intrusion from the sea		
5.4			Establishment/maintenance of embankment and sluice gate for saving crops from high tide and flood		
5.5	Establish seasonal dam in the mouth of the river connecting canal				
6	Social Mobilization for Institutional Adjustment/Adaptation				
6.1			Social mobilization for the Management of embankment and sluice gates through the water user groups in one union as pilot basis for growing rice and other crops as suitable to the area	Social mobilization for the Management of embankment and sluice gates through the water user groups in one union as pilot basis for growing rice and other crops as suitable to the area	Social mobilization for the Management of embankment and sluice gates through the water user groups in one union as pilot basis for growing rice and other crops as suitable to the area

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Nazirpur Upazila, Pirojpur

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	Farmers current practice	Recommended as new			
1	Adaptation Options for Agriculture/crop sector				
1.1	Cultivation of T. Aman rice variety cultivation		Cultivation of BR23, BR25, Brihan40, 41 and Local Long Variety of Aman (Lalmota, Dudhkalam, Motadhan, Kholni, Dalkachua, Joyna) (Kharif-II)	Cultivation T. Aman (BR23, BR41 and 2 local varieties)	Cultivation of T. Aman-variety-BR31,33,40,41,46 (HYV), local-Vozon, Maynamoti, Mota, Naizershile
1.2			Cultivate HYV rice by the month of Agrahayan and Poush		
1.3			Cultivation of short duration rice variety (Chikon, Mukta, Lalkartik, Dudhkalam)		
1.4			Cultivation of saline tolerant Boro rice	Cultivation of saline tolerant Bridhan47 as Boro	
1.5			Cultivation of Boro, BR16, BR23		
1.6			Cultivation of Mung, Lentil, Mustard		
1.7			Cultivate saline tolerant maize, chick pea and other crops		
1.8			Cultivate vegetables in the high and saline free land		
1.9			Cultivation of pest resistant crops, follow IPM		

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	Farmers current practice	Recommended as new			
1.10			Cultivation of drought tolerant crops		
1.11			Raise seedbed in the high land		
1.12	Homestead vegetable gardening			Homestead vegetable cultivation	Homestead vegetable cultivation (ipomea/gima kolmi, okra, spinach, ridge gourd, snake gourd, bitter gourd, sweet gourd, egg plant , cucumber, ash gourd, teasel gourd, data)
1.13	Homestead spices cultivation				
1.14		Potato, pulse, mustard and maize cultivation by zero tillage			
1.15	Fruit gardening- Jujube, Mango, Guava, lemon				
1.16		Cultivation of green manuring crops			
1.17		Compost pit preparation	Compost pit preparation		
1.18		Mini pond excavation	Excavate mini pond for preservation of rain water for subsequent irrigation		
2	Adaptation Options for Fisheries sector				
2.1		Integrated rice-fish culture	Rice-fish cultivation through group approach	Rice-fish cultivation with local rice variety	Rice fish culture- Rui, katla, Mrigel, Minar carp, Telapia, golda, sarputi
2.2		Bagda (brackish shrimp) culture in fallow saline marshy land	Cultivate saline tolerant fish		

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2.3	Local fish culture in water logged area				
2.4	Fish culture through re-excavation of river and canal				
2.5			Protecting fish by putting-up fence/net around the pond		
2.6				Small scale duck cum fish culture	Small scale duck cum fish culture - local, Khaki, Gingding
3	Adaptation Options for Livestock sector				
3.1		Grass production in fallow land		Production of fodder (Para and Napier grass)	Fodder cultivation-napier, maize, para, ipil ipil
3.2		Breeding for improvement of local cattle stock			
4	Adaptation Options for Forestry sector				
4.1		Establishment of mini nursery			Establishment of mini nursery
4.2	Tree plantation on saline fallow land, roadside educational institutions and pond bank				
5	Adaptation Options for Structural sector				
5.1	River and canal re-excavation		Re-excavation of traditional canal and preserving fresh/sweet water in the canal by erecting mud bund/wall for subsequent		

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	Farmers current practice	Recommended as new			
			irrigation		
5.2			Establishment/maintenance of embankment and sluice gate for saving crops from saline water, high tide and flood		
5.3			Re-excavate traditional pond for preservation of rain water for subsequent irrigation		
5.4		River bank repairing and vegetable cultivation on the bank			
6	Adaptation Options for household energy use efficiency and mitigation				
6.1		Improved stove making			Improved stove making
7	Social Mobilization for Institutional Adjustment/Adaptation				
7.1			Social mobilization for the Management of embankment and sluice gates through the water user groups in one union as pilot basis for growing rice and other crops as suitable to the area	Social mobilization for the Management of embankment and sluice gates through the water user groups in one union as pilot basis for growing rice and other crops as suitable to the area	Social mobilization for the Management of embankment and sluice gates through the water user groups in one union as pilot basis for growing rice and other crops as suitable to the area

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Lalpur Upazila, Natore

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	Farmers current practice	Recommended as new			
1	Adaptation Options for Agriculture/crop sector				
1.1		Cultivation of short duration rice; Bridhan 39, 41,33 (T. Aman), Bridhan 28(rabi)	Cultivation of short duration rice; Bridhan 39, 41,33 (T. Aman), Bridhan 28(rabi)	Cultivation of short duration rice; Bridhan 39, 41,33 (T. Aman)	Cultivation of early T. aman. Bridhan 33,39
1.2		Cultivation of short duration and late var. BR 21 rice			
1.3		Introduce cropping pattern; T. Aman- Chickpea-Jute/ B. aus and Mung-T. Aman-wheat/Pulses (BARI lentil 3,4), Green Manuring –T. Aman-S,cane/ wheat/ pulses	Introduce cropping pattern; T. Aman- Chickpea-Jute/ B. aus and Mung-T. Aman-wheat/Pulses (BARI lentil 3,4), Green Manuring –T. Aman-S,cane/ wheat/ pulses	Introduce cropping pattern; T. Aman- Chickpea-Jute/ B. aus and Mung-T. Aman-wheat/Pulses (BARI lentil 3,4)	
1.4		Cultivate short duration vegetables like red amaranth, spinach		Year round vegetables cultivation	
1.5		Cultivate flood/ water resistant Sugar Cane (IR 37, 38)			
1.6		Cultivation of drought tolerant crops (Sesame, Mung bean, BARI mas)		Cultivation of drought Mung bean, BARI mas	Cultivation of Black gram/Mung bean; BARI Mas/Bina Mung
1.7		Cultivation of drought tolerant vegetables like Okra, S.			

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		gourd, Ash gourd, etc.			
1.8		Cultivation of pest resistant seed crop Veg.-g. nut, corriandam, Kalozira, IPM, HYV Vegetables			
1.9	Homestead vegetables gardening			Homestead gardening; BARI Model	Homestead gardening; BARI Model
1.10	Mango(Lokhon Bhog), jujube, Timber tree, Litchi, Papaya, Banana				Jujube (Apple, BAU Kul) gardening
1.11		Floriculture			Flower (Kath Belly) cultivation
1.12		Organic manuring	Organic manuring		Compost preparation
1.13		Re-excavation of pond			Excavation of Mini pond
2	Adaptation Options for Fisheries sector				
2.1		Short duration fish culture (Thai puti, silver carp, pangas, thai koi) cultivation	Short duration fish culture (Thai puti, silver carp, pangas, thai koi) cultivation		Short duration fish polyculture
2.2		Pond dyke raising, net/bana setting		Secure fish from flood by erecting net/bamboo mat in the pond bank	
3	Adaptation Options for Livestock sector				
3.1		Goat rearing			
3.2		Introduction of drought resistant poultry variety (Cok)			
3.3				Fodder cultivation	Fodder (Napair/gama grass)

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					cultivation
4	Adaptation Options for Forestry sector				
4.1	Nursery establishment, fruits and timber		Nursery establishment, fruits and timber	Nursery establishment, fruits and timber	
4.2	Tree Plantation				
4.3		Tree Plantation(to check river erosion)			
5	Adaptation Options for Structural sector				
5.1		Canal re-excavation for Supplementary Irrigation	Canal re-excavation for Supplementary Irrigation		
5.2		Facilitate drainage by re-excavating the traditional canals	Facilitate drainage by re-excavating the traditional canals		

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Bagatipara Upazila, Natore

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	Farmers current practice	Recommended as new			
1	Adaptation Options for Agriculture/crop sector				
1.1		T. Aman rice cultivation	T. Aman rice cultivation	T. Aman Rice cultivation (Bidhan33,39 and 41)	T. Aman Rice cultivation (Bridhan33,39 and 41)
1.2		Boro rice cultivation	Boro rice cultivation		
1.3	Homestead vegetables gardening			Homestead vegetable gardening (BARI Model)	Homestead vegetable gardening (BARI Model)
1.4		Introduce cropping pattern; Maize –Mungbean -T. Aman Wheat-Mungbean-T. Aman Wheat-Sesame-T. Aman Jujube -T. Aman			
1.5	Year round vegetable cultivation	Year round vegetable cultivation			
1.6			Mixed crop cultivation (Brinjal, Chilli and Termeric in field)		
1.7		Cultivation of aroid	Cultivation of aroid (Lotiraj kanchu)		
1.8					Jujube Gardening (BAU Kul, Thi Kul and Apple Kul)
1.9					Mango gardening Local Variety- Lokhan

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1.10		Farm Yard manure	Farm Yard Manure		Compost preparation
1.11		Excavation of Mini ponds			Excavation of Mini ponds
2	Adaptation Options for Fisheries sector				
2.1		Mixed fish culture (Sharputi, minar carp, grass carp and silver carp)	Mixed fish culture (Sharputi, minar carp, grass carp and silver carp)		Carp poly culture
2.2		Prawn culture in fresh water			
3	Adaptation Options for Livestock sector				
3.1		Fodder crop cultivation (Napier, para, germen and khasheri)	Fodder crop cultivation (Napier, para, germen and khasheri)	Cultivation of fodder crops (Para, napier, german)	Cultivation of fodder crops (Napier and Gama)
3.2		Duck rearing			
3.3		Goat rearing			
4	Adaptation Options for Forestry sector				
4.1	Nursery establishment		Nursery establishment	Nursery establishment	
4.2	Tree plantation				
5	Adaptation Options for Structural sector				
5.1		Re-excavation of traditional ponds for supplementary irrigation			
		Establishment of shallow and deep tube wells			