

SUB-SECTOR INTERVENTION ELEMENT MATRIX (SIEM) ON NEEDS (Additions are in Blue)

	Policy / Institutional	Infrastructure	Human resource capacity	Provision / support	Information / knowledge
Seed	<p>A-1</p> <ul style="list-style-type: none"> -Seed legislation / standard including institutional arrangements for variety release & mechanisms to regulate the whole process of Seed Production, phytosanitary & delivery with the Promotion of PPP. -Policy on access to improved seed varieties - Seed Multiplication associations created and registered -Private sector companies to be registered and involved in seed multiplication. <p><Homework> Discuss, with key stakeholders incl. private, modalities of variety development, multiplication and delivery.</p>	<p>A-2</p> <ul style="list-style-type: none"> -Breeding facilities including Genebank, -Testing and Certification Facilities in the Production Zones -Multiplication facilities -Storage facilities -Distribution facilities <p><Homework> Elaborate location, production capacity of each facility.</p>	<p>A-3</p> <ul style="list-style-type: none"> - Farmers and seed inspectors trained on maintenance of pure seed, seed multiplication - Recruitment and enhance training for Breeders - Multidisciplinary team specialists in Seed Technology, agronomy, pathology, entomology -Capacity Building on Statistical Data on annual seed Production, requirement and seed exchange rate. <p><Homework> Elaborate location, number of breeders and team specialists.</p>	<p>A-4</p> <ul style="list-style-type: none"> - Certified seeds provided at 50 – 60% subsidized rated through a voucher or other efficient mechanisms -Adequate support for annual collection and review of seed data. <p><Homework> Decide subsidy rate, delivery mechanisms and delivery dates.</p>	<p>A-5</p> <ul style="list-style-type: none"> - Factsheets (on use of quality seeds, seed quality maintenance, information on new varieties, suitable agro-ecological zone for planting and appropriate labeling). - Dissemination of the seed law. - Annual seed requirement information established including determination of seed exchange rate. <p><Homework> Decide how many new varieties to be developed by year X.</p>
Fertilizer	<p>B-1</p> <p>Fertilizer policy on:</p> <ul style="list-style-type: none"> - Use - Regulation - Standard - Delivery mechanism - Production - Procurement <p><Homework> Check, if these policies exist, amendment is necessary, or implementation capacity is lacking.</p>	<p>B-2</p> <ul style="list-style-type: none"> -Production facilities -Storage and Distribution facilities - Soil testing laboratories <p><Homework> Elaborate location, production capacity of each facility.</p>	<p>B-3</p> <ul style="list-style-type: none"> - Farmers, extension staff, input dealers trained on handling & storage, safe use and application of inorganic fertilizers - Farmers, extension staff and input dealers trained on production and use of organic fertilizers <p><Homework> Elaborate location, number of extension staff and dealers.</p>	<p>B-4</p> <ul style="list-style-type: none"> - Fertilizers provided at least 30% subsidized rated through a voucher or other efficient mechanisms <p><Homework> Decide subsidy rate, delivery mechanisms and delivery dates.</p>	<p>B-5</p> <ul style="list-style-type: none"> - Factsheet on environmental impact of use of fertilizer - Factsheet on integrated soil fertility management -Soil Mapping for efficient fertilizer use. - Annual fertilizer requirement for the different agro-ecologies established - Guidelines for fertilizer application rates, time and methods for the different agro-ecologies provided
Irrigation / water management	<p>C-1</p> <ul style="list-style-type: none"> -Policy on water use -Laws & regulations -Groups (Bylaws to govern operations and management of water users' Associations) <p><Homework> Like fertilizers, elaborate elements of policies to be established</p>	<p>C-2</p> <ul style="list-style-type: none"> -Full irrigation facilities -Partial irrigation facilities in rainfed lowlands (Wells, Borehole, Canals, Dykes) -Meteo Station <p><Homework> Elaborate location, target size of each type of facilities.</p>	<p>C-3</p> <ul style="list-style-type: none"> -Farmers and extension staff trained on small scale irrigation -Technicians trained in water management meteorological data collection - Trained WUA on organization skills, water 	<p>C-4</p> <ul style="list-style-type: none"> -Water management associations provided with small farm tools, water pumps + accessories, water distribution pipes and technical assistance for feasibility studies and constructions. 	<p>C-5</p> <ul style="list-style-type: none"> - Guidelines and recommendations on water management disseminated through Factsheets and communication media

			<p>management and O&M skills</p> <ul style="list-style-type: none"> - Trained farmers in aquaculture skills <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate location, number of such groups / individuals.</p> </div>	-Increasing funding for developing irrigation facilities	
On-farm technology dissemination (R&E)	<p>D-1</p> <p>-Formulation/Review of Research & extension policy.</p> <p>-Formation of Groups/farmers' association/Cooperative.</p>	<p>D-2</p> <p>-Facilities for research, extension and farmers training</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate location, detailed capacity of each type of facilities.</p> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Communicate with the Ministry of Public Works and know where and when such infrastructures will be put in place. Then start thinking about where to grow rice for urban consumption.</p> </div>	<p>D-3</p> <p>- Farmers, research technicians and extension staff trained Periodically by both Government/Private Sector on improved technologies, good practices such as leveling, soil fertility management, etc via demonstration farms/plots</p> <ul style="list-style-type: none"> - Sufficient and Qualified number of extension agents recruited -capacity building to improve skills and ability targeting youths and women <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate location, number of such groups / individuals recruited or trained.</p> </div>	<p>D-4</p> <p>-Technology packages for demonstration provided(seed, agro-chemicals, factsheets and guidelines)</p>	<p>D-5</p> <p>-Factsheets on the appropriate (technically feasible, socially acceptable, economically viable) technologies for demonstration/adoption by farmers/ and farmers Group</p> <ul style="list-style-type: none"> -Constant interaction Between Researchers, Extension and Farmers. -Strengthening Collaborations between Public Extension and Other Extension Services Providers. -Integration of Aquaculture in Paddy Rice Production - Utilization of mass media for Sensitizing Farmers
Mechanization	<p>E-1</p> <ol style="list-style-type: none"> 1.Policy on test code and certification, promotion, Research and development 2.Mechanization Policy (formulated, review d or strategy updated) 3.African Network for Agric. Mechanization 	<p>E-2</p> <ol style="list-style-type: none"> 1. Machine testing/certification center 2.Maintenance Workshop Assembly Workshop (public/private) 3.Small industry (local artisan, fabricators) 4. Mechanization training centers <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate location, detailed capacity of each type of facilities.</p> </div>	<p>E-3</p> <p>Trained</p> <ol style="list-style-type: none"> 1.Dealers 2. Operators 3. Farmers 4. Artisans 5. R&D Engineers 6.Extension 7. Technicians <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate number of such individuals considering E-2.</p> </div>	<p>E-4</p> <ol style="list-style-type: none"> 1.Tax exemption 2.Import tariff exemption 3.Appropriate subsidy 4. Guarantee /warranty 5.Provision of spare-parts 6.After sales service 7.Low interest credit 8. Support for Technology Transfer for Appropriate Machineries 9 Promotion and support for innovation. 	<p>E-5</p> <ol style="list-style-type: none"> 1. Dissemination of Research output on mechanization 2.News bulletins 3.Operation manuals 4.Exhibitions 5.Demonstrations 6.Information sharing
Quality improvement	<p>F-1</p> <ul style="list-style-type: none"> - Policy <u>to</u> promote and facilitate milling business - Tax Exemption (mills, spare parts and engines) - Subsidies on installation of machinery 	<p>F-2</p> <ul style="list-style-type: none"> - Sufficient number of Rice mills (small (custom), medium & large scale) in each rice growing areas - Drying yards/ facilities - Storage facilities 	<p>F-3</p> <ul style="list-style-type: none"> - Well-trained rice millers - Farmers trained and encouraged to sell milled rice instead of paddy - Rice value chain actors trained on milled rice 	<p>F-4</p> <ul style="list-style-type: none"> - Parboiling equipment - Rice mills - Weigh scales (for village rice mills) -Subsidies, credits, grants provided when necessary 	<p>F-5</p> <ul style="list-style-type: none"> - Knowledge on applicable technologies related to transportation, handling, processing, standards & storage availed through

	<ul style="list-style-type: none"> - Milling machine standards - Grain quality standards <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate selection of policy tools and their details. Elaborate applicable (not ambitious) standards.</p> </div>	<p>(including PPP)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate location, detailed capacity of each type of facilities.</p> </div>	<p>standards.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate number of such individuals considering F-2.</p> </div>		<p>factsheets and communication media</p> <ul style="list-style-type: none"> - Appropriate custom mills for local adoption (case studies & location) through applied research
Access to market	<p>G-1</p> <ul style="list-style-type: none"> - Regulations to protect the rice market. - Information network for promotion (place, ways & means) - Enable environment for private sector - Introduce import tariffs if necessary - Modality on promoting market-oriented profitable rice-based system - Legal back-stopping policy - Buffer stocking policy <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Select policy tools to adopt and elaborate details. Also necessary to identify what are the elements of enabling environments.</p> </div>	<p>G-2</p> <ul style="list-style-type: none"> - Market infrastructures - Rehabilitation access roads, railways, water ways - ICT - Facilities for strategic reserves <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Communicate with the Ministry of Public Works and know where and when such infrastructures will be put in place. Then start thinking about where to grow rice for urban consumption.</p> </div>	<p>G-3</p> <ul style="list-style-type: none"> - Entrepreneurship skills training - Training of the value chain actors (Traders, Transporters, millers, Processors) based on their needs according to demand driven market oriented 	<p>G-4</p> <ul style="list-style-type: none"> - Agric. funding from tariff revenue in the form of subsidies, grant to PPP - Grant to support farmers associations for collective /Contract Marketing and Distribution 	<p>G-5</p> <ul style="list-style-type: none"> - Market information survey (type of rice preferred by the major consumers, its quality and price, Cross Border Trade); - Market information system (Collection, Analysis, Interpretation and Dissemination) - Knowledge on cost/benefit analysis on rice value chain. <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p><Homework> Elaborate what market information you want to generate.</p> </div>
Access to credit	<p>H-1</p> <ul style="list-style-type: none"> - Facilitation of enabling environment for short to long term agro-financing (Financial and micro-finance institutions) - Sensitization on ROSCA (Rotating Savings and Credit Associations) - Policy on efficient cooperatives implementation, M&E & auditing of cooperatives operations 	<p>H-2</p> <ul style="list-style-type: none"> - Infrastructures for rural financial institutions 	<p>H-3</p> <ul style="list-style-type: none"> - Capacity Building of stakeholders (Farmers, Farmers Organization, Extension officers, etc) On Development of business plans to access credit from financial institutions 	<p>H-4</p> <ul style="list-style-type: none"> - Provision of financial capital for credit schemes 	<p>H-5</p> <ul style="list-style-type: none"> - Information dissemination on financial institutions offering agricultural credit and their terms and conditions
Overall policy tools	<p>I-1</p> <ul style="list-style-type: none"> - Food and Nutrition Security Policy¹, - Production Policy², - Trade Policy,³ 	<p>I-2</p> <ul style="list-style-type: none"> - Cross cutting infrastructure policy to facilitate agricultural production 	<p>I-3</p> <ul style="list-style-type: none"> - Policy Analysts (existing to reinforce or new ones) - Policy Analysts to review rice related policies 	<p>I-4</p> <ul style="list-style-type: none"> - Specific support policy to small scale farmers. - Support to Farmers/Communities for 	<p>I-5</p> <ul style="list-style-type: none"> - Dissemination of Reliable Rice and related data

¹ Food Policy: (stability of food supply and price, effective food distribution, **Adequacy**, food safety, promotion of food export & import).

² Production Policy: (technological innovation, capacity development of farmers, extension service, agricultural banking).

	<p>-Agricultural Land Policy⁴ -Rural Area Policy⁵ -Land Tenure</p> <p>-Agricultural Insurance - Policy on cooperatives (efficient implementation, Diversified Income Generating, M&E & auditing of cooperatives operations).</p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p><Homework> Check, if these policies exist, amendment is necessary, or implementation capacity is lacking.</p> </div> <p>-Policy for Comprehensive Measures (to Promote Engagement of Youth in Agriculture and empower women). -Policy on Watershed Management.</p>	<p>-Rehabilitation, upgrading and Refurbishment of Agricultural Statistical Unit and Institutions.</p>	<p>-Capacity Building (recruitment and Training) for Agricultural Statistic Institutions. -capacity building on environment and watershed management at community level. -</p>	<p>Watershed Management -Re-enforcement and coordination of institutions responsible of Agricultural Statistics (Collection, Collation, Analysis & Interpretation)</p>	
<p>Unclassified: -Other Agro-chemicals</p>	<p>Other agro-chemical policy on:</p> <ul style="list-style-type: none"> - Use - Regulation - Standard - Delivery mechanism - Production - 	<ul style="list-style-type: none"> -Production facilities -Distribution facilities 	<ul style="list-style-type: none"> - Training on safe use and application of other agro-chemicals - Training on production and use of other agro-chemicals 	<ul style="list-style-type: none"> - Subsidy - Timely delivery of other agro-chemicals 	<ul style="list-style-type: none"> - Environmental impact on the use of other agro-chemicals -

³ Trade Policy: related to the marketing of products (imported, exported and locally produced).

⁴ Agricultural Land Policy: (land reform, agricultural infrastructure improvement).

⁵ Rural Area Policy: encouragement of community activities.