Adapting conservation agriculture for rapid adoption by smallholder farmers in North Africa (CANA Project)

MONITORING AND EVALUATION (M&E) MATRIX

GOAL/IMPACT: Adoption of CA among small farmers in North African region is enhanced					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Has the project influenced a positive perception change about the CA system among target farmers? • Have CA adopting farmers increased the yield of cereal crops (wheat and barley) - and consequently the economic output per ha - at the end of the project and in the subsequent years thereafter? • Did the project continue to increase the number of CA adopting farmers after the project closing? • Has the project increased the acreage cropped under the CA system in the target countries after the project closing?	I1. At least 10,000 ha per each core country are cropped under the CA system 3-5 years after project closing (this acreage would amount to 30,000 ha per country 10 years after project closing)	• Area cropped under CA system in the target countries in Year 3-5 after project closing (and Year 10 after project closing)	**How:** Impact Evaluation study **Where:** Project selected sites in the target countries **By who:** Contracted consultancy firm or individual consultants	Year 3-5 after project closing	Once
	I2. At least 50% of the CA adopting small farmers in have reported an increase of at least 180 AUD per hectare of cereal crop (wheat or barley) 3-5 years after project closing.	• Number of farmers that adopted CA system in Year 3-5 after project closing • Increase of produce value in AUD per ha and per farmer within a sample of adopting farmers in Year 3-5 after project closing)	**How:** Impact Evaluation study **Where:** Sample of adopting farmers on project selected sites in the target countries **By who:** Contracted consultancy firm or individual consultants	Year 3-5 after project closing	Once
	I3. At least 50% of soils hosting CA system in the 3 core countries have improved stature against wind and water erosion (run off)	• A set of physico-chemical parameters of soils within a sample of soils hosting CA system according to the research protocol	**How:** Impact Evaluation study **Where:** Sample of adopting farmers on project selected sites in the target countries **By who:** Contracted consultancy firm or individual consultants	Year 3-5 after project closing	Once

PURPOSE/EFFECTS: Capacities of NARES in the 3 participating countries to promote CA and enhance its adoption among small farmers in the region are strengthened					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Has the project increased the number of CA adopting farmers that adopted the CA system among its direct and indirect beneficiaries within its time-life?	1. At least 1,000 small farmers among the project direct beneficiaries have adopted a CA cropping system (correct, regular entire or partial application) at project closing (300 in Yr 1; 600 in Yr 2; and 1,000 in Yr 3)	• Number of direct beneficiaries reached by the project • Number of direct beneficiaries that have adopted CA cropping system	**How:** Yearly monitoring forms + Annual Progress Reports **Where:** Project selected sites on 3 platforms **By who:** National teams in 3 countries (TBI)	End of Years 2, 3 and 4	Once a year
	2. At least 5,000 small farmers among the project indirect beneficiaries have adopted a CA cropping system ((correct, regular entire or partial application) at project closing (1,000 in Yr 2; 2,500 in Yr 3; and 5,000 in Yr 4)	• Number of indirect beneficiaries reached by the project • Number of indirect beneficiaries that have adopted CA cropping system	**How:** Yearly monitoring forms + Annual Progress Reports **Where:** Project selected sites on 3 platforms **By who:** National teams in 3 countries (TBI)	End of Years 2, 3 and 4	Once a year

	3. At least 50% of the project beneficiaries have declared a perception change (from negative to positive perception) about the CA system by the end of the project	• Number of project (direct and indirect) beneficiaries at the end of the project • Number of project (direct and indirect) beneficiaries that declare a positive perception change about the CA system within a sample of project beneficiaries at the end of the project	**How:** Adoption study **Where:** Sample of beneficiaries on project selected sites in the target countries **By who:** Socio-economic teams of 3 countries	At project closing	Once

OUTPUT1: Major bio-physical, agro-ecological and socio-economic constraints to CA adoption by small farmers are identified					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Are major bio-physical and agro-ecological constraints to CA adoption identified? • Are socio-economic constraints to CA adoption identified? • Are pros and cons policy and institutional options for CA adoption clearly determined?	1a. A baseline study report based on a household survey of at least 100 farmer-households for each platform is validated by the end of Year 1 of the project	• Agreed-upon parameters according to validated common questionnaire in each selected project site	**How:** Household survey of 100 farmers **Where:** Project selected sites on 3 platforms **By who:** Socio-economic teams of 3 countries	End of Year 1	Once
	1b. An agro-ecological characterisation study report for each platform is validated by the end of Year 1 of the project	• Agreed-upon parameters according to validated common template in each selected project site	**How:** Agro-ecological study **Where:** Project selected sites on 3 platforms **By who:** AEC teams in 3 countries	End of Year 1	Once
	1c. A typology of production systems report including a similarity analysis is finalised by the end of Year 2 of the project	• Agreed-upon parameters according to validated common research protocol	**How:** Typology + Similarity analysis including the sets of data of the 3 platforms **Where:** 3 platforms + Regional level **By who:** Socio-economic teams + AEC teams in 3 countries + other resource persons	End of Year 2	Once
	1d. A policy and institutional set-up review for each core country including working recommendations is available by the end of Year 2 of the project	• Pros and cons policy and institutional options for CA adoption	**How:** Desk documents review **Where:** 3 core countries **By who:** Socio-economic teams of 3 countries	End of Year 2	Once

OUTPUT2: Low-cost small size and simple technology no-till (or ZT) seeding machinery is made available.					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Did the project succeed in developing new ZT seed drill prototypes that fit the context of target platforms? • Did the project test and assess the different ZT seed	2a. A new ZT seed drill prototype to meet key specifications identified in the target platforms is tested by the end of Year 2 of the project	• Technical specifications of ZT seed drill prototype in	**How:** Design form **Where:** 3 target platforms **By who:** Machinery design teams of 3 countries	End of Year 2	Once
	2b. A field performance assessment of different ZT seed drill options for successful crop establishment in the 3 platforms is conducted annually from Year	• Agreed-upon common sets of agro-ecological parameters of the different ZT seed drill options	**How:** Field performance study **Where:** Project selected sites on 3 platforms	End of Years 2, 3 and 4	Once a year

drill options in the target platforms? • Did the project succeed in engaging local manufacturers for the development & manufacture of low-cost appropriate ZT machinery options?	2 to Year 4	• Agreed-upon common sets of socio-economic parameters of the different ZT seed drill options	**By who:** Agronomists + Machinery joint teams		
	2c. At least 2 local manufacturers are engaged by the project in the development and manufacture of low-cost appropriate ZT machinery options by the end of Year 3 of the project	• Level of commitment of local manufacturers • Level of implementation of the approved work plan	**How:** Monitoring of signed agreements between CANA project and local manufacturers through regular visits/meetings **Where:** local manufacturers' workshops in 3 countries **By who:** Machinery design teams of 3 countries	End of Years 2 and 3	On quarterly basis
	2d. An economic and investment opportunities assessment of the new ZT drills in the 3 platforms is available during Year 4 of the project	• Costs and benefits of the investment in low-cost ZT seed drills	**How:** Cost-benefit analysis **Where:** **By who:** Socio-economic teams + Machinery design teams of 3 countries	End of Year 4	Once

OUTPUT3: Appropriate weed management and crop-livestock integration practices are developed					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Did the project provide technical responses to farmers' constraints on CA adoption such as weed control management, crop diversification, alternative feed sources, etc.? • Has the project assessed the profitability/productivity of integrated crop-livestock production systems under CA?	3a. Options for an integrated weed control management at the farm level with consideration of herbicide resistance and adequate application are developed by the end of Year 3 of the project	• Technical set of parameters according to the common research protocol (OFRM trials, OFFM Trials, etc.)	**How:** Trials and experiments **Where:** Project selected sites in 3 platforms **By who:** Agronomists of the national teams + Australian experts	During Years 1, 2 and 3	Once a year on main stages of growing season
	3b. Options for crop diversification (including forage crops) and a crop sequence to enhance diversification and sustainable productivity are developed for each platform by the end of Year 3 of the project	• Technical set of parameters according to the common research protocol (OFRM trials, OFFM Trials, etc.)	**How:** Trials and experiments **Where:** Project selected sites in 3 platforms **By who:** Agronomists of the national teams + Australian experts	During Years 1, 2 and 3	Once a year on main stages of growing season
	3c. At least one decision tool/model for crop monitoring and risk management is validated by the end of Year 3 of the project	• Technical set of parameters according to the common research protocol (OFRM trials, OFFM Trials, etc.) • Groupings and synthesis	**How:** Decision model design **Where:** Project selected sites in 3 platforms + Australia **By who:** agronomists of the national teams + Australian experts	End of Year 3	Once
	3d. A set of alternative integrated feeding options (including forage crops) is developed by the end of Year 3 of the project	• Technical set of parameters according to the common research protocol (OFRM trials, OFFM Trials, etc.)	**How:** Trials and experiments **Where:** Project selected sites in 3 platforms **By who:** Agronomists of the national teams + Australian exp.	During Years 1, 2 and 3	Once a year on main stages of growing season
	3e. The profitability and productivity of integrated crop-livestock production systems under CA is evaluated by the end of Year 4 through the use of	• Sets of technical parameters for each identified production system • Economic data on the different	**How:** Partial budgeting + others **Where:** 3 platforms **By who:** agronomists-	End of Year 3	Once

	decision support and modelling tools	cultural practices and inputs on each identified production system	economists joint teams		

OUTPUT4: A NARES capacity development plan for CA promotion is implemented in each participating country					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Did the project succeed in raising the awareness on CA system among main stakeholders in the region? • Did the project allow scientists, extensionists and farmers from the region to check the Australian expertise *in situ*? • Did the project improve direct beneficiaries' knowledge about CA system? • Did the project promote/use outreach and dissemination means in favour of CA adoption?	4a. 3 raising awareness workshops are yearly organised in each participating country by the end of Year 3 of the project (1st WS at project start-up; 2nd WS in mid-growing season; 3rd WS in a field visit at end of season).	• Number of awareness workshops organised • Number of participants of different types of stakeholders per workshop • Major decisions or recommendations	**How:** Workshop briefs **Where:** Project selected sites in the 3 platforms **By who:** Outreach specialists + CANA Project Management Team	End of Years 1, 2 and 3	For every workshop
	4b. Up to 15 scientists/extensionists/ farmers from the region visit Australia before project closing (3 in Yr 1; 6 in Yr 2; 3 in Yr 3; and 3 in Yr 4)	• Number of scientists and extensionists visiting Australia • Number of farmers visiting Australia	**How:** Mission reports (or briefs) **Where:** 3 platforms + Regional level **By who:** CANA Project Management Team	End of Years 1, 2, 3 and 4	Once a year
	4c. At least 5 field days/farmer field schools per platform are yearly organised (FFS 1 on ZT machinery and planting & crop establishment; FFS 2 on IPM; FFS 3 on crop & soil management and risk management; FFS 4 on residue management and crop/livestock integration; and FFS 5 on crop diversification and rotation)	• Number of FD/FFS organised • Number of participants of different types of stakeholders per FD/FFS • Major lessons learned	**How:** FD/FFS Briefs (same as Workshop Briefs) **Where:** Project selected sites in the 3 platforms **By who:** Outreach specialists + CANA Project Management Team	End of Years 1, 2, 3 and 4	For each FD/FFS
	4d. At least 5 brochures covering different subjects on CA are published before project closing	• Number of issues printed per brochure • Number of issues disseminated per brochure (disaggregated per category of stakeholders)	**How:** Stock from **Where:** 3 platforms + Regional level **By who:** Outreach specialists + CANA Project Management Team	End of Years 1, 2, 3 and 4	Once a year for each brochure

OUTPUT5: A CA regional hub is developed around the ICARDA regional office in Tunis					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Did the project promote the expected exchange between the Australian expertise and the region? • Did the project succeed in capitalising the CA experience in the Maghreb region?	5a. 7 Australian scientists visit the region before project closing (1 in Yr 1; 2 in Yr 2; 3 in Yr 3; and 1 in Yr 4)	• Number of Australian scientists visiting scientists	**How:** Project annual reports + mission reports of Australian visiting scientists **Where:** Regional level + 3 platforms **By who:** CANA Project Management Team + National Coordinators	End of Years 1, 2, 3 and 4	Once a year
	5b. At least 15 scientists/extensionists and 12 farmers have participated in the inter-regional visits organised by the project before project closing	• Number of scientists and extensionists participating in inter-regional visits • Number of farmers participating in	**How:** Project annual reports **Where:** Regional level **By who:** CANA Project Management Team	End of Years 1, 2, 3 and 4	Once a year

		inter-regional visits			
	5c. The project membership is extended to Libya ad Mauritania before the end of Year 2	• Number of Libyan and Mauritanian participants in regional activities	**How:** Participants' reports **Where:** Regional level **By who:** CANA Project Management team	End of Years 2, 3 et 4	Once
	5d. A regional final workshop on CA is organised before project closing	• Number of participants • Thematic areas of the workshop • Recommendations of the workshop • Lessons learned & success stories	**How:** Workshop proceedings **Where:** Workshop venue (regional level) **By who:** CANA Project Management team + Workshop Scientific Committee	End of Year 4	Once
	5e. Un site web of the CA North Africa Network is functional before the end of Year 3 of the project	• Number of visitors • Number of discussions/chats on CA	**How:** Site web investigation **Where:** Regional level **By who:** CANA Project Management team	End of Years 3 and 4	Once a year

OUTPUT6: The project is efficiently managed by a project management unit (PMU) established in the ICARDA regional office in Tunis					
Performance questions	**Indicators**	**Data to be collected**	**Methods of data collection**	**Timeframe**	**Frequency**
• Did the project clearly plan its activities on a regular basis? • Did the project assess its progress on a regular basis? • Was the project managed on the basis of an agreed-upon M&E plan?	6a. An annual work plan is yearly validated by the Steering Committee	• Annual work plans and budgets of the platforms • Annual plan and budget for regional activities	**How:** Desk document review **Where:** Regional level **By who:** CANA Project Management team	Start of Years 1, 2, 3 and 4	Once a year
	6b. An annual progress reports is yearly validated by the Steering Committee	• Annual progress reports and expenditures reports of the platforms • Annual progress/implementation reports and expenditures reports for regional activities	**How:** Desk document review **Where:** Regional level **By who:** CANA Project Management team	End of Years 1, 2, 3 and 4	Once a year
	6c. At least 80% of the monitoring activities registered in the validated M&E plan are conducted according to schedule	• Number of M&E activities mentioned in the agreed-upon M&E plan • Number of M&E activities implemented on a timely-basis	**How:** Desk document review **Where:** Regional level **By who:** CANA Project Management team	End of Years 1, 2, 3 and 4	Once a year
	6d. A CA adoption study is conducted at the end of the project	• Sets of data to show the degree and rate of CA adoption according to an agreed-upon common questionnaire	**How:** Adoption study reports **Where:** Project selected sites on 3 platforms **By who:** Socio-economic teams of 3 countries	At project closing	Once
	6e. A study on farmer perception on CA system is conducted at the end of the project	• Sets of data to show the perception change on CA system among direct and indirect beneficiaries according to an agreed-upon common questionnaire	**How:** Adoption study reports **Where:** Project selected sites on 3 platforms **By who:** Socio-economic teams of 3 countries	At project closing	Once