Annex A: Results / Logical Framework						
Project	To complete the process of implementation of the Cartagena Protocol through an innovative approach that promotes a strong link between					
objective	biosafety and biodiversity					

Component 1: Strengthening of institutional capacity for GMO surveillance, monitoring and detection.								
Outcomes and Outputs		Objectively Veri	Sources of varification	Risks and				
Outcomes and Outputs	Indicators	Baseline	Midterm Target	End of project Target	Sources of vermication	assumptions		
Outcome 1.1: National laboratories strengthened to provide GMO detection support and related post approval monitoring activities.	# of Nat labs certified for GMO detection	- 0 labs that are certified for GMO	2 (labs equipped)	Selected laboratories have started the process of certification; with all the necessary documentation submitted to the certification accredit bodies.	 Financial reports, terminal Terminal report, Documents uploaded in the Anubis system (UNEP's tool). MTE and TE reports 	Authorities responsible for the operation of laboratories recognize the importance and support the process through assignment of staff, as well as facilities and equipment The certification process is completed within the project timeframe.		
	# of workshops for technicians# of detection test undertaken	Lack of training, there are few technicians who have experience in GMO detection -0 detection tests	Training programme developed -2 detection tests undertaken	5 labs with personnel trained in GMO detection4-detection tests undertaken	 List of trained personnel Training certification diplomas Terminal report, Documents uploaded in the Anubis system (UNEP's tool). MTE and TE reports 	Selected laboratories support the training process of technical staff.		

Outputs for Outcome 1.1:

1.1.1 Diagnosis of the installed capacity and of trained human resources in detection of GMOs

1.1.2, 2 laboratories equipped.
1.1.3 Harmonized Toolkits/Guidelines/Protocols/Standard Operating Procedures (SOPs) on GMO detection developed and/or adapted to suit Guatemala's reality.
1.1.4 Training programme on GMO detection established (e.g. workshops and manuals).

Outcomes and Outputs		Objectively Veri	Sources of verification	Risks and		
Outcomes and Outputs	Indicators	Baseline	Midterm Target	End of project Target	Sources of vernication	assumptions

Outcome 1.2: Agreements for collaborative networking established between national and international labs	# of signed agreements	0 signed agreements	1 collaboration agreement signed	2 collaboration agreement signed	 MoU drafts. Communication between labs and the project. Signed collaboration agreements. 	There is interest from selected institutions related to detection of GMOs in undertaking this task and establishing cooperation agreements
Outputs for Outcome 1.2	2:		· · · · · · · · · · · · · · · · · · ·	- .	· · · · · · · · · · · · · · · · · · ·	
1.2.1 Inter-Laboratory coo	peration woos developed	Objectively Ver	itiable Indicators	ent approach between natio	nai and regional laboratories).	Dicke and
Outcomes and Outputs	Indicators	Baseline	Midterm Target	End of project Target	Sources of verification	assumptions
Outcome 1.3: Country able to implement biosafety monitoring and surveillance measures	 # of monitoring plans for GMOs approved # of M&S procedures rolled(i.e use of strip test, field supervision missions, etc) 	Baseline: 0 Baseline: 1	1 GMO monitoring plan approved 3 monitoring procedures rolled out.	4 monitoring procedures rolled out	 Stakeholder technical profiles and list of responsibilities and roles Communication and/or inter-institutional coordination maps or documents Individual stakeholder official role and communication channel documents High-level meetings minutes 	Authorities agree to incorporate new functions related to GMO's M&S in their responsibilities and work plans; designating staff for these functions and securing resources for operation.
	# of biosafety measures implemented in the National Custom System. (mock or real by custom officers).	0 Biosafety measures applied in the custom system	Biosafety measures used /tested at 2 custom checkpoints.	Biosafety measures used /tested at 2 custom checkpoints.	 Official Policy and implementation plan describing technical profiles, role, scope, operation, tasks and structure of National Custom System Resolution or decree establishing biosafety measures for the National Custom System. 	The National Custom System (or its equivalent) is recognized as an integral part of the national biosafety system. There is continuity in the personnel institutional delegates.

Outputs for Outcome 1.3:

1.3.1 Operative guidelines and clear roles and responsibilities for a monitoring and surveillance system developed (using as a base the early developments done during the implementation projects)

1.3.2 Strategy for field detection (screening procedure) developed.1.3.3 Administrative and technical guides designed for each institution involved in the National Custom System.

1.3.4 Workshops (4) for custom officers on monitoring and surveillance.

Component 2: Strengthening of administrative and technical biosafety system of the National Competent Authorities (NCAs), in line with article 2.1 of the CPB								
Outcomes and Outputs	Indicators	Objectively Veri Baseline	fiable Indicators Midterm Target	End of project Target	Sources of verification	Risks and assumptions		
Outcome 2.1: Country with administrative and operative capacities to process GMO applications	at least 2 GMO applications (mock or real) have been processed	1 GMO applications have been processed.	Digital system under development (designed completed, servers purchased, IT configuration in progress).	2 applications (mock or real) processed through the new digital system	NCA internal guidelines or approval documents. Digital system Project M&E reports.	Stakeholders agree to develop joint and coordinated risk assessment and management methodologies as well as coordinated administrative systems. The national biosafety law has been approved and serves as a basis for the process.		

Outputs for Outcome 2.1: 2.1.1 Sectorial regulations and their respective implementation tools for biosafety regulation, developed during the previous Implementation Project, tested and submitted for approval 2.1.2 Digital system for managing GMO applications in place and connecting all competent authorities as a single window for processing applications. 2.1.3 Hands on training for the NCA's personnel (2 mock exercises on how to process dossiers using the new digital system).

Component 3: Strengthening the science-policy link through public awareness and education tools									
Outcomes and Outputs		Objectively Ver	C	Risks and					
	Indicators	Baseline	Midterm Target	End of project Target	Sources of vertification	assumptions			
Outcome 3.1:	# of high level	0 members of the new	2 high level sensitization	4 high level	Memories of workshops.	The relevant decision			
Science-policy link is	sensitization events for	authorities sensitized	meetings	sensitization meetings		makers agree to			
strengthen through a	policy makers and	about biosafety			Informative material	participate and assign			
better informed biosafety	decision-makers				published.	personnel and			
decision-making process			100% of informative	100% of informative		resources for reaching			
	# of informative		materials designed and	materials designed and		the outputs of this			
	materials developed		50% of Informative	100% of Informative		outcome.			
			materials produced	materials produced					
						The political situation			
						in Guatemala remains			
						stable and there are no			
						unexpected changes			
						in authorities.			
	-								
Outputs for Outcome 3.1	1:								
3.1.1 Four high level meet	tings to sensitize politicians	and decision makers on the c	country's biosafety capacities						
3.1.2. Informative materia	ls for sensitization of decis	ion-makers developed							
3.1.3 Informative material	s on the role of men and we	omen in biosafety developed							
Outcomes and Outputs		Objectively Ver	ifiable Indicators		Sources of verification	Risks and			

	Indicators	Baseline	Midterm Target	End of project Target		assumptions			
Outcome 3.2:	Biosafety is included in	Biosafety and	1 National educational	National educational	• Approved strategy and	Education Ministry			
A national	the education topics for	biotechnology not	strategy in biosafety and	strategy in biosafety	educational materials	agrees to participate			
biotechnology and	primary and secondary	included in the national	biotechnology drafted.	and biotechnology	• Minutes of meetings with	and provide co-			
biosafety educational	schools	educational system.		approved and adopted	the ministry of education	financing.			
strategy contributes to				by the Ministry of	• Meetings and workshops	-			
public awareness.				Education.	records and minutes.				
-	#of teaching materials	0 specific teaching	3 Teaching materials	4 Teaching materials	Approved documents	Education Ministry			
	available for primary	materials available.	(e.g. booklets) for the	(e.g. booklets) for the	 Meetings and workshops 	participates and			
	and secondary school		implementation of the	implementation of the	records and minutes	provides co-financing			
	and teachers.		strategy designed.	strategy produced and	Cooperation agreements	r8			
				approved by Education	• Cooperation agreements	Availability of trained			
				Ministry.	Drojost reports	national personnel to			
				i i i i i i i i i i i i i i i i i i i	• Project reports.	write the booklets.			
Outputs for Outcome 3.2	Outputs for Outcome 3.2:								
3.2.1 Draft of a national ed	lucational strategy in biosat	fety and biotechnology.							
3.2.2 Teaching materials (booklets) to facilitate future	e implementation of the nation	al strategy generated for prin	nary and secondary school s	students and teachers.				
Component 4: Develop	oing capacities on liabil	ity and redness (Article 2'	7) and socioeconomic con	nsiderations (Article 26))				
Outcomes and Outputs	T 1 • /	Objectively Veril	iable Indicators		Sources of verification	Risks and			
	Indicators	Baseline	Midterm Target	End of project Target		assumptions			
Outcome 4.1:	Ratification of the	The Protocol is	The Protocol has been	Main stakeholders are	Commission minutes.	The NCAs and the			
Guatemala moved	Nagoya-Kuala Lumpur	completely unknown in	widely discussed among	aware of the importance	Event invitation lists.	main stakenolder			
towards ratification of	Protocol on the agenda	Guatemala and there are	the different stakeholder	of ratifying the NKLP,	Event agendas and	institutions show			
the Nagoya - Kuala	of National authorities	not national efforts to	institutions related to	and the country moves	participants lists.	interest in discussing			
Lumpur Protocol.		ratify yet since the topic is	biosafety, biotechnology	towards ratifying the		and approve the			
		still not well understood.	and blodiversity (through	instrument.	NCA internal approval	ratification of the			
			meetings, round tables,		documents and official	protocol.			
			etc).		communications				
			The importance of its						
			ratification is well known						
			since it is important to						
			protect the great						
			Guatemala's biodiversity						
			(a mega diverse country).						
Outputs for Outcome 4.1	:		(a moga arverse country).			<u>μ</u>			
4.1.1 Analysis of the jurid	ical and technical implication	ons of ratification of the supple	ementary protocol.						
4.1.2 Public awareness act	ivities among decision-mak	ers and other stakeholders.							
4.1.3NKLP ratification do	cument for ratification by t	he relevant authority							
4.1.4 Proposal on how to i	nclude and manage liability	and redress (L&R) issues in t	he current biosafety adminis	trative system					
Outcomes and Outputs		Objectively Verif	iable Indicators		Sources of verification	Risks and			
outcomes and Outputs	Indicators	Baseline	Midterm Target	End of project Target	Sources or vermeation	assumptions			
Outcome 4.2:	# of socio-economic	0 socio-economic	Socio-economic	Socio- economic	Minutes of meetings	NCAs agree to			
Guatemala takes into	considerations take into	considerations included in	considerations are	considerations included	Memories of workshops	discuss and take into			
account socio economic	account for decision-	GMO decision making	identified and analyzed	in biosafety tools (i.e	Methodologies drafted.	account socio			

consideration In GMO	making	since there have been no	for inclusion in decision-	guidelines, legal		economic aspects.
decision-making		applications processed	making process	instruments, etc)		
		Information available				
	Project activities take	concerning the role of				
	into account role of	women men and				
	indigenous and local	indigenous communities in	Analysis of the roles of			
	communities, as well as	agriculture, and on the	men, women and			
	differences between	importance of maize in	indigenous communities			
	roles played by women	cultural traditions. However	in agriculture in			
	and men in agriculture	there is no clarity on the	Guatemala, and in	Outcome of the study is		
	in Guatemala (maize as	impact that adoption of	particular in relation to	taken into account in		
	a case study).	GMOs could have for these	the use of maize.	the inclusion of		
		groups		socioeconomic		
				considerations in		
Output for Outcome 4.3				decision-making.		
4.2.1 Stude of the emisting						
-1.4 Z $+1.5$ may of the existing	national and regional appro	paches related to the use of soc	ioeconomic consideration in	decision making		
4.2.1 Study of the existing 4.2.2 Analysis of the techr	national and regional appro- nical and legal implications	oaches related to the use of soc of the implementation of Artic	bioeconomic consideration in the 26 of the CPB.	decision making.		
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser	national and regional appronised appropriate and legal implications vation of native biodive	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe	ioeconomic consideration in ele 26 of the CPB. ty related activities	decision making.		
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser	national and regional appro- nical and legal implications vation of native biodive	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif	ioeconomic consideration in le 26 of the CPB. ty related activities iable Indicators	decision making.	Samo of a fraction	Risks and
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs	national and regional appro- nical and legal implications vation of native biodive Indicators	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif Baseline	ioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators Midterm Target	decision making.	Sources of verification	Risks and assumptions
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1:	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif Baseline national collections and	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators <u>Midterm Target</u> By PY2, academic	decision making. End of project Target Results published and	Sources of verification Signed support	Risks and assumptions SENACYT and other
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize´s genetic	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators <u>Midterm Target</u> By PY2, academic institutions conducting	decision making. End of project Target Results published and shared with the NCAs	Sources of verification Signed support agreements.	Risks and assumptions SENACYT and other academy institutions
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native genetic resources of	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize´s genetic diversity in	oaches related to the use of soc of the implementation of Artic crsity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological characterization	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators Midterm Target By PY2, academic institutions conducting research on maize genetic	ecision making. End of project Target Results published and shared with the NCAs to support risk	Sources of verification Signed support agreements.	Risks and assumptions SENACYT and other academy institutions agree to participate
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native genetic resources of agricultural importance	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize´s genetic diversity in Huehuetenango Region.	oaches related to the use of soc of the implementation of Artic rsity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological characterization	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators Midterm Target By PY2, academic institutions conducting research on maize genetic diversity identified;	End of project Target Results published and shared with the NCAs to support risk assessment and eventual	Sources of verification Signed support agreements. Technical reports.	Risks and assumptions SENACYT and other academy institutions agree to participate and provide co-
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native genetic resources of agricultural importance (e.g. maize) is increased	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize´s genetic diversity in Huehuetenango Region.	oaches related to the use of soc of the implementation of Artic rsity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological characterization No molecular	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators Midterm Target By PY2, academic institutions conducting research on maize genetic diversity identified;	End of project Target Results published and shared with the NCAs to support risk assessment and eventual decision-making.	Sources of verification Signed support agreements. Technical reports.	Risks and assumptions SENACYT and other academy institutions agree to participate and provide co- financing.
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native genetic resources of agricultural importance (e.g. maize) is increased through the application of biografut	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize's genetic diversity in Huehuetenango Region. Local communities (in	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological characterization No molecular characterization available ,	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators Midterm Target By PY2, academic institutions conducting research on maize genetic diversity identified; GM free zones normative	End of project Target Results published and shared with the NCAs to support risk assessment and eventual decision-making.	Sources of verification Signed support agreements. Technical reports. Publications	Risks and assumptions SENACYT and other academy institutions agree to participate and provide co- financing.
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native genetic resources of agricultural importance (e.g. maize) is increased through the application of biosafety measures,	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize's genetic diversity in Huehuetenango Region. Local communities (in particular those of Huehuetenango region)	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological characterization No molecular characterization available ,	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators Midterm Target By PY2, academic institutions conducting research on maize genetic diversity identified; GM free zones normative drafted and socialized, and including feedback of	End of project Target Results published and shared with the NCAs to support risk assessment and eventual decision-making. GM free zones normative approved by	Sources of verification Signed support agreements. Technical reports. Publications Information on scientific work along these lines	Risks and assumptions SENACYT and other academy institutions agree to participate and provide co- financing.
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native genetic resources of agricultural importance (e.g. maize) is increased through the application of biosafety measures,	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize's genetic diversity in Huehuetenango Region. Local communities (in particular those of Huehuetenango region) have been consulted	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological characterization No molecular characterization available , Not enough knowledge of possible impacts of GMOs	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators Midterm Target By PY2, academic institutions conducting research on maize genetic diversity identified; GM free zones normative drafted and socialized, and including feedback of local communities in	End of project Target Results published and shared with the NCAs to support risk assessment and eventual decision-making. GM free zones normative approved by authorities in support of	Sources of verification Signed support agreements. Technical reports. Publications Information on scientific work along these lines done by academic	Risks and assumptions SENACYT and other academy institutions agree to participate and provide co- financing.
4.2.1 Study of the existing 4.2.2 Analysis of the techr Component 5: Conser Outcomes and Outputs Outcome 5.1: Protection of native genetic resources of agricultural importance (e.g. maize) is increased through the application of biosafety measures,	national and regional appro- nical and legal implications vation of native biodive Indicators Better knowledge of Maize's genetic diversity in Huehuetenango Region. Local communities (in particular those of Huehuetenango region) have been consulted.	oaches related to the use of soc of the implementation of Artic ersity in support of biosafe Objectively Verif Baseline national collections and incomplete morphological characterization No molecular characterization available , Not enough knowledge of possible impacts of GMOs adoption by local	tioeconomic consideration in the 26 of the CPB. ty related activities iable Indicators <u>Midterm Target</u> By PY2, academic institutions conducting research on maize genetic diversity identified; GM free zones normative drafted and socialized, and including feedback of local communities, in particular those of	End of project Target Results published and shared with the NCAs to support risk assessment and eventual decision-making. GM free zones normative approved by authorities in support of biosafety decision-	Sources of verification Signed support agreements. Technical reports. Publications Information on scientific work along these lines done by academic institutions	Risks and assumptions SENACYT and other academy institutions agree to participate and provide co- financing.

5.1.1 Maize baseline data (morphologic, genetic, socioeconomic and distribution of wild maize) is strengthened through support of ongoing research initiatives and data gathering activities.

(western part).

Huehuetenango region.

Support agreements have been signed with academia institutions for conducting maize data..

Germplasm collecting has been conducted in at least one region of Guatemala

making

communities.

5.1.2 Normative, defining GMO's free zones, is drafted.

Outcomes and Outputs		Objectively Veri	Sources of worification	Risks and		
Outcomes and Outputs	Indicators	Baseline	Midterm Target	End of project Target	Sources of vertification	assumptions
Outcome 5.2:	1 GM free zone	No GMO free zone in	Proposal for creation of	Genetic reserve	Technical reports.	Local authorities
There is a clear link	established	Guatemala	Genetic reserve drafted	proposal finalized and		agree to participate
between biodiversity			and socialized with local	approved by authorities.	Drafted proposal.	and provide
protection and biosafety	•		communities, and			cofinancing.
actions.			decision-makers		Signed agreements.	
				Corn genetic reserve is		National authorities
				establish and local		are prone to approve
				authorities commit		and implement the
				resources for its		new in situ
				operations.		conservation model.
Outputs for Outcome 5.2	2:					

5.2.1 A maize genetic reserve is established in Huehuetenango region based on systematization of information from 5.1.1 and land use regulations.

Gender indicators for project execution:

-Equal opportunities provided to men and women for project related positions (i.e project staff and consultancies). -Thesis projects as indicated in component 5 will be provided on basis of gender equality.