

Project Design Matrix (PDM), Plan of Operation (PO)
& Monitoring
of
Social Forestry Extension Model Development Project
for
Semi-Arid Area

Contents

1. PDM, PDM(Revised)
2. Revised PO
3. PO (2nd Revision)
4. Project Monitoring Chart
5. Record of the 2nd Monitoring (Description of Each Item)

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PROJECT DESIGN MATRIX (Revised)

Annex I

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal The inhabitants of semi-arid areas in Kenya are equipped with appropriate techniques to plant trees and management them</p>	<ul style="list-style-type: none"> - Number of inhabitants who adopted more appropriate method of social forestry extension in semi-arid areas 	<ul style="list-style-type: none"> Sample questionnaire survey 	<ul style="list-style-type: none"> - Government policy to promote farm forestry is not changed - Adequate number of extension agents and their operation fund are timely provided - Severe natural disasters, such as drought, does not occur
<p>Project Purpose A social forestry extension model for semi-arid areas is developed through establishment of farm forest by local residents</p>	<ul style="list-style-type: none"> - Preference by farmers - Preference by extension agents - Cost effectiveness - Replicability to other semi-arid areas 	<ul style="list-style-type: none"> - Interviews to farmers - Interviews to extension agents - Project document - Assessment by a third party 	<ul style="list-style-type: none"> - Need for tree products and social forestry techniques and extension services by farmers does not change
<p>Outputs</p> <ol style="list-style-type: none"> 1. Practical techniques for planting and tending trees for establishment of farm forest are provided 2. Appropriate methods of establishing farm forests are developed 3. Information on social forestry extension is shared by the people and other related organizations 	<ol style="list-style-type: none"> 1. - No. of techniques adopted for farm forest establishment <ul style="list-style-type: none"> - No. of technical reports 2. - No. of successful farm forests <ul style="list-style-type: none"> - No. of unique/original findings on methods of farm forest establishment 3. - No. of recipients who utilize and share the information 	<ol style="list-style-type: none"> 1. - Project document <ul style="list-style-type: none"> - Technical reports 2. - Project document <ul style="list-style-type: none"> - Project document 3. - Sample questionnaire survey 	<ul style="list-style-type: none"> - Natural conditions, such as rain fall patters, does not change greatly - Severe natural disasters, such as drought, does not occur - Inputs form both sides are timely and adequately provided
<p>Activities</p> <ol style="list-style-type: none"> 1. Develop practical technique for establishment of farm forests in semi-arid areas <ol style="list-style-type: none"> 1.1. Develop technology in the Pilot Forest 1.2. Verify practical technologies by on-farm experiments 1.3. Prepare technical manuals 2. Design, establish, monitor and evaluate farm forests <ol style="list-style-type: none"> 2.1. Establish farm forest in SFTP (II) target area 2.2. Collect and analyze information concerning establishment of farm forest 2.3. Formulate strategic plan for promoting farm forest establishment by local residents 2.4. Establish farm forests 2.5. Establish farmer to farmer extension system 2.6. Improve demonstration plots in Tiva (DEMO II) 2.7. Feedback of technical knowledge of planting and tending into the technology development 2.8. Intermediate evaluation 2.9. Review of plan of farm forest establishment 2.10. Final evaluation and compilation of the results of the activities 3. Collect, synthesize and disseminate information on social forestry extension <ol style="list-style-type: none"> 3.1. Make preparations for information activities 3.2. Hold regular meetings 3.3. Collect and analyze of information from outside sources 3.4. Collect of information accumulated through project activities 3.5. Develop extension materials on establishment of farm forest for extension agents 3.6. Disseminate information through publications and events 	Inputs		<ul style="list-style-type: none"> - Severe natural disasters, such as drought, does not occur - Cooperation by the farmers and related institutions are obtained - Planted trees for experiment are not stolen nor damaged by animals/ insects/diseases - Inputs form both sides are timely and adequately provided
	Japanese Side	Kenyan Side	
	<ol style="list-style-type: none"> 1. Experts <ul style="list-style-type: none"> 6 long-term experts in the following fields <ul style="list-style-type: none"> - Chief Advisor - Coordinator - Technology Development - Farm Forest Establishment (technology) - Farm Forest Establishment (extension) - Extension method and information 2 - 3 short-term experts per year 2. Training in Japan <ul style="list-style-type: none"> 2 - 3 counterparts per year 3. Equipment 4. Sharing of running expenses <ul style="list-style-type: none"> - for plantation - for extension 	<ol style="list-style-type: none"> 1. Counterparts and staff <ul style="list-style-type: none"> - Project Director - Project Manager - Project Coordinator - Counterparts <ul style="list-style-type: none"> PF Manager Extension Manager Forest Ext. Officer Training Manager Training Officer Research Officer - Administrative staff <ul style="list-style-type: none"> Clerks Drivers & Laborers Other supporting staff 2. Land & buildings 3. Running expenses for the implementation of the project 	<p style="text-align: center;">Preconditions</p> <ul style="list-style-type: none"> - Inputs form both sides are timely and adequately provided

PROJECT DESIGN MATRIX

Annex 1

Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumptions				
<p>Overall Goal The inhabitants of semi-arid areas in Kenya are equipped with appropriate techniques to plant trees and management them</p>	<ul style="list-style-type: none"> - Number of inhabitants who adopted more appropriate method of social forestry extension in semi-arid areas 	<p>Sample questionnaire survey</p>	<ul style="list-style-type: none"> - Government policy to promote farm forestry is not changed - Adequate number of extension agents and their operation fund are timely provided - Severe natural disasters, such as drought, does not occur 				
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Output (1) : Practical techniques for planting and tending trees for establishment of farm forest are provided.

Activities	Targets/Indicators	Schedule																				Responsible persons in the project	Inputs	Remarks	
		1998				1999				2000				2001				2002							
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
I. Develop practical technique for establishment of farm forest in semi-arid areas																									
1.1 Develop technology in the Pilot Forest																									
1.1.1 Development of basic tree planting technologies																									
1.1.1.1 Seeds germination	Melia volkensii, Terminalia brownii																						Muok, Kyalo, Hayashi	labour, fuel, tools, consumable	
1.1.1.2 Root system	root pattern and drought tolerant																						Kyalo, Muok, Hayashi	labour, fuel, tools, consumable	
1.1.1.3 Insect/disease control	Degree of damage comparison																						Kyalo, Muok, Hayashi	labour, consumable	
1.1.2 Verification of intensive planting management																									
1.1.2.1 Water catchment	optimum type, size / growth, erosion																						Kigwa, Muok, Noda	labour	change of schedule
1.1.2.2 Mulching	necessity of mulching / growth																						Kigwa, Muok, Noda	labour	change of schedule
1.1.2.3 Weeding	optimum frequency / growth, survival																						Kigwa, Muok, Noda	labour	change of schedule
1.1.2.4 Water regime	clear weeding, slash / growth, survival / 0.58ha																								
1.1.2.4.1 Soil moisture	treatment-soil moisture relations / growth																						Kigwa, Muok, Noda	labour, machine, fuel, seedling, short term expert	change of schedule
1.1.2.4.2 Sun heat shield effect and mulching	effect of mulching / growth / 0.78ha																						Kigwa, Muok, Noda	labour, machine, fuel, seedling, short term expert	change of schedule
1.1.2.4.3 Water stress	pruning-water stress relations / correlation																						Kigwa, Muok, Noda	labour, short term expert	change of schedule
1.1.2.4.4 Evapo-transpiration	water consumption / sap flow																						Kigwa, Muok, Noda	labour, short term expert	change of schedule
1.1.3. Verification of planting technology																									
1.1.3.1 Monitoring of existing spacing plot	optimum spacing / growth, survival																						Kigwa, Muok, Noda	labour	change of schedule
1.1.3.2 Study pruning of existing plot	effect of pruning / growth, survival																						Kigwa, Muok, Noda	labour, consumable	change of schedule
1.1.3.3 Study thinning of existing plot	effect of thinning / growth, die-back																						Kigwa, Muok, Noda	labour, consumable	change of schedule
1.1.3.4 Study coppicing of existing plot	coppicing ability / no. of coppices																						Kigwa, Muok, Noda	labour	change of schedule
1.1.4 Establishment of Wildfruits demonstration orchard	establishing orchard, experiment plan and tending / 20 spp. / 2.08ha																						Kigwa, Muok, Noda	labour, machine, fuel, seedling, consumable	this activities particularly will be implemented with strong initiatives of Kenyan e/p change of schedule
1.1.5 Supporting activity of technology development																									
1.1.5.1 Weather monitoring data	weather data																						Kyalo, Kigwa, Auka, Muok, Hayashi, Noda	labour, monitoring, tools	
1.1.5.2 Collection of references	references / no. of references																						Kigwa, Kyalo, Auka, Noda, Hayashi	consumable	
1.1.5.3 Management of experimental plot and road network	road management, experimental plot management / 14.5km																						Kigwa, Auka, Noda	labour, machine, fuel, consumable	
1.1.5.4 Seed collection, production and supply of seedling	necessary no. / no. of seedlings necessary weight / weight of seed collected																						Kyalo, Hayashi	labour, fuel, seed purchase, tools, materials	
1.1.5.5 Management of Tiva arboretum	no. of spp. / weight of seed supplied																						Kyalo, Hayashi	labour, fuel, tools, consumable	
1.1.5.6 Protection of human and animal damage	decrease of damage / number of damages / 1,000ha																						Kigwa, Kyalo, Noda, Hayashi	labour, fuel, equipment, consumable	
1.1.5.7 Study on work efficiency	work efficiency table																						Kigwa, Kyalo, Noda, Hayashi	labour, consumable	

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		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV			
1.2 Verify practical technologies by on-farm experiments																								
1.2.1 Farmers selection																								
1.2.1.1 Collection of physical and weather condition data.	stratification of area/map																					Kyalo, Muok, Hayashi	Vehicle , fuel, tools	
1.2.1.2 Selection of representative farmers	No. of selected farmers																					Kyalo, Muok, Hayashi	Vehicle , fuel, tools, stationary	
1.2.1.3 Technology workshop for selected farmers	No. of workshops																					Kyalo, Muok, Hayashi	Vehicle , fuel, tools, stationary	
1.2.2 Verification of the technologies developed in the pilot forest																								
1.2.2.1 Water harvesting (Micro-catchment)	Appropriate structure/type of structure																					Kyalo, Muok, Hayashi	labour, consumable, fuel, tools, vehicle, seedlings	
1.2.2.2 Site preparation	Appropriate method/no. of method																					Kyalo, Muok, Hayashi	labour, consumable, fuel, tools, vehicle, seedlings	
1.2.2.3 Hole size	Optimum size/no. of hole sizes																					Kyalo, Muok, Hayashi	labour, consumable, fuel, tools, vehicle, seedlings	
1.2.2.4 Weeding (complete, slashing, spot)	Weeding method/growth and survival																					Kyalo, Muok, Hayashi	labour, consumable, fuel, tools, vehicle, seedlings	change of schedule
1.2.2.5 Pruning	Optimum pruning height/different pruning level																					Kyalo, Muok, Hayashi	labour, consumable, fuel, tools, vehicle, seedlings	
1.2.3 Introduction of new technology	Same farmers in 1.2.1																							
1.2.3.1 Fruit trees	Adaptability/ farmer acceptance																					Kyalo, Muok, Hayashi	labour, consumable, fuel ,tools, vehicle, seedlings	change of schedule
1.2.3.2 Folder	Adaptability/ management																					Kyalo, Muok, Hayshi	labour, consumable, fuel ,tools, vehicle, seedlings	change of schedule
1.2.4 Weather Monitoring and soil sampling	1 rain gauge per selected farmer sample soil on each selected farm																					Kyalo, <u>Omanbia</u> , Muok, Hayashi	monitoring tools , labour ,fuel, soil collection tools, soil analysis equipment	addition of officer
1.3 Prepare technical manuals																								
1.3.1 Data collection and management	Collect, summarize and file data from all exp. plots and some farm forest																					Muok, <u>Kigwa</u> , Kyalo Auka, Mishima, Hayashi, Noda	transportation, stationery, labour Computer	
1.3.2 Data analysis	All collected data																					Muok, <u>Kigwa</u> , Kyalo, Auka, Mishima, Hayashi, Noda	stationery	
1.3.3 Preparation of manuals	Draft and prepare manual for publication/ 3 manuals.																					Muok, <u>Kigwa</u> , Kyalo, Auka, Mishima, Hayashi, Noda	stationery	

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		1998				1999				2000				2001							2002			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				I	II	III	IV
2.4 Establish farm forests																								
2.4.1 Train extension agents																								
2.4.1.1 Implement training courses	Number of TAs trained					■												Kamene,Rateng,DFEO,Muok,Kyalo,Osore,Hiro,Yamauchi,Hayashi	training expenses		change of schedule & addition of officers			
2.4.1.2 Implement OJT through establishment of farm forests	Number of TAs trained					■	■	■	■	■	■	■	■	■	■	■	■	DFEO,Ali,Emily,Muok,Kyalo,Osore,Hiro,Hayashi	bicycles, motorbike		addition of officer			
2.4.2 Select target farmers	Number of selected target farmers						■											Ali,Emily,DFEO,Muok,Kyalo,Osore,Hiro,Hayashi,	transport, stationery		addition of officer & change of respsbl prsn			
2.4.3 Train target farmers	Number of target farmers trained						■											Kamene,Rateng,DFEO,Muok,Kyalo,Osore,Hiro,Yamauchi,Hayashi	training expenses		addition of officers			
2.4.4 Conduct profile survey on selected targets	Number of target farm profiles						■											Ali,Emily,Damaris,DFEO,Osore,Hiro,Hayashi	transport, stationery		addition of officers			
2.4.5 Establish farm forests and monitor																								
2.4.5.1 Design target farm forests	Number of designed farm forests																	Ali,Emily,DFEO,Muok,Kyalo,Osore,Hiro,Hayashi,Yamauchi	transport, stationery, allowance		addition of officer & change of respsbl prsn			
2.4.5.2 Establish farm forests	Number of established farm forests																	DFEO,Ali,Emily,Osore,Damaris,Hiro,Hayashi	transport, seedlings, labour,		addition of officers			
2.4.5.3 Monitor the establishment of farm forests	Number of times monitored / reports																	DFEO,Ali,Emily,Muok,Kyalo,Osore,Hiro,Hayashi	transport, allowance		addition of officers			
2.4.5.4 Record keeping	Number of records																	DFEO, Ali, Emily,Muok, Kyalo, Hiro,Hayashi,	stationery					
2.4.6 Improve Demonstration plots in Tiva	Number of items demonstrated																	Osore, Muok, Damaris, Hiro	Labour, seeds & Seedlings, tools		new activity			
2.5 Feedback of technical knowledge of planting and tending into the technology development	Report including identified gaps																	Muok, Kyalo,Osore,Hayashi	stationery		change of officers			
2.6 Intermediate evaluation	Intermediate evaluation report																	Muok,DFEO, Kamene,Kyalo,Osore,Hiro,Yamauchi,Hayashi	transport, stationery, allowance		addition of officer & change of respsbl prsn			
2.7 Review of plan of farm forest establishment	Revised plan																	Muok, Kamene,DFEO,Ali,Emily,Osore,Kyalo,Rateng,Hiro,Yamauchi,Hayashi	stationery		addition of officer			
2.8 Establish farm forests by extension agents																								
2.8.1 Select target farmers	Number of selected farmers																	DFEO	transport, stationery					
2.8.2 Conduct profile survey on selected targets	Number of target farm profiles																	DFEO	transport, stationery					
2.8.3 Design target farm forests	Number of design of farm forests																	DFEO	transport, stationery, allowance					
2.8.4 Establish farm forests	Number of established farm forests																	DFEO	transport, seedlings					
2.8.5 Monitor the establishment of farm forests	Number of times monitored / reports																	DFEO	transport, stationery					
2.8.6 Record keeping	Number of records																	DFEO	stationery					
2.8.7 Monitoring of above activities	Number of times monitored / reports																	Emily,Ali,DFEO,Hiro	transport, stationery					
2.9 Final evaluation and compilation of the result of the activities	Final evaluation report																	Muok,Kamene,DFEO,Ali,Emily,Osore,Kyalo,Rateng,Hiro,Yamauchi,Hayashi	transport, stationery		addition of officer & change of respsbl prsn			

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Activities	Targets/Indicators	Schedule																				Responsible persons in the project	Inputs	Remarks
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		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV			
2 Design, establish, monitor and evaluate farm forest																								
2.1 Establish farm forests in SFTP (II) target area																								
2.1.1 Select target farmers	Number of selected target farmers		■	■																		Ali, Emily,DFEOs,Yamauchi	transport, stationery, allowance, labour	
2.1.2 Conduct profile survey on selected targets	Number of target farm profiles			■	■																	Ali, Emily, DFEOs, Hiro	transport, stationery, allowance, labour	
2.1.3 Design target farm forests	Number of designed farm forests			■																		Muok,Kyalo,DFEOs, Hayashi, Hiro,Yamauchi	transport, stationery, allowance, labour	
2.1.4 Establish farm forests	Number of established farm forests				■																	Ali, Emily,Kyalo,DFEOs, Hiro,Hayashi	transport, stationery, allowance, labour, seedling,	
2.1.5 Monitor the establishment of farm forests	Number of times monitored / reports																					DFEOs,Ali,Emily,Muok,Kyalo,Osor	transport, stationery, allowance, labour	
2.1.6 Record keeping	Number of records																					DFEOs, Ali, Emily, Muok, Kyato Hiro, Hayashi	Stationery.	
2.2 Collect and analyze information concerning establishment of farm forest																								
2.2.1 Review of SFTP (II) extension approaches	Crucial points for tree planting by farmers report	■	■	■																		Emily, Ali, Rateng,Yamauchi	Stationery	
2.2.2 Conduct general conditions survey in target areas	General conditions report of the target areas	■	■	■	■	■	■															DFEOs, Muok, Ali Yamauchi, Hayashi	transport, stationery, consultancy	
2.2.3 Conduct forest resource survey	Forest resource inventory report				■						■											Muok,Segawa, Hayashi,	Survey instrument, transport,Short term expert	
2.2.4 Conduct survey for general condition of individual farmers in target areas	Criteria for selecting target farmers/ Socio-economic survey report	■	■	■																		Muok, Kamene,DFEOs, Hiro	transport consultancy	
2.3 Formulate strategic plan for promoting farm forest establishment by local residents																								
2.3.1 Set up guideline for farm forest establishment	Guideline for farm forest establishment				■	■	■			■												Nyambati, Muok, other team member Hiro	Stationery	
2.3.2 Identify appropriate approach for target farmer selection	SOFEM's approach for farmer selection (Village app, Group app and Individual app)				■	■	■															Ali, Emily, DFEOs, Hiro	Stationery	
2.3.3 Select target areas	Number of target areas					■																All team members	Stationery	
2.3.4 Conduct and monitor seeds/seedlings information system	Num of people shared seed/seedling information									■			■			■			■			Ali, DFEOs, Hiro	Stationery	
2.3.5 Conduct and monitor cost sharing system	Number of local residents participated																					Emily, DFEOs, Hiro	Stationery	

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3-3

Activities	Targets/Indicators	Schedule																				Responsible persons in the project	Inputs	Remarks	
		1998				1999				2000				2001				2002							
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
2.4 Establish farm forests																									
2.4.1 Train extension agents																									
2.4.1.1 Implement training courses	Number of TAs trained																						Kamene,Rateng,DFEOs, Nyambati, Osore, Hiro, Yamauchi, Hayashi	training expenses	
2.4.1.2 Implement OJT through establishment of farm forests	Number of TAs trained																						DFEOs,All,Emily, Nyambati,Osore Hiro, Hayashi	bicycles, motorbike	
2.4.2 Select target farmers	Number of selected target farmers																						DFEOs,All,Emily,Nyambati,Osore Hiro,Hayashi,	transport, stationery	
2.4.3 Train target farmers	Number of target farmers trained																						Kamene,Rateng,DFEOs, Nyambati, Osore, Hiro, Yamauchi, Hayashi	training expenses	
2.4.4 Conduct profile survey on selected targets	Number of target farm profiles																						DFEOs,All,Emily,Nyambati,Osore Nyambati, Hiro	transport, stationery, allowance	
2.4.5. Design target farm forests	Number of designed farm forests																						DFEOs,All,Emily,Nyambati,Osore Hiro	transport, stationery, allowance	
2.4.6 Establish farm forests	Number of established farm forests																						DFEOs,All,Emily,Nyambati,Osore Hiro	transport, seedlings, labour,	
2.4.7 Monitor the establishment of farm forests	Number of times monitored / reports																						DFEOs,All,Emily,Nyambati,Osore Hiro	transport, allowance	
2.4.8 Record keeping	Number of records																						DFEOs,All,Emily,Nyambati,Osore	stationery	
2.5 Establish farmer to farmer extension system																									
2.5.1 Prepare programme for farmer to farmer extension	Concept paper																						All, DFEOs Hiro	stationery	
2.5.2 Conduct and monitor farmer to farmer extension programme	Number of farmers trained																						All, Emily, DFEOs, Osore Hiro	transport, stationery, allowance	
2.6 Improve demonstration plots in Tiva (DEMO II)																									
2.6.1 Develop and demonstrate practical farm forestry related technologies	Number of technologies demonstrated																						Osore, Nyambati, other team member Hiro	Labour, seeds & Seedlings, tools	
2.6.2 Conduct and monitor OJT programme	Number of people trained																						Osore, Nyambati, other team member Hiro	transport, stationery, allowance	
2.7 Feedback of technical knowledge of planting and tending into the technology development	Report including identified gaps																						Nyambati, All,Emily,Osore Hiro	stationery	
2.8 Intermediate evaluation	Intermediate evaluation report																						Muok, Nyambati Hiro,Yamauchi,Hayashi	transport, stationery, allowance	
2.9 Review of plan of farm forest establishment	Revised plan																						Muok, Nyambati Hiro,Yamauchi,Hayashi	stationery	
2.10 Final evaluation and compilation of the result of the activities	Final evaluation report																						Hiro Muok, Nyambati Hiro,Yamauchi,Hayashi	transport, stationery	

Note . 1. 1st quarter is January to March, 2nd quarter April to June, 3rd quarter July to September and 4th quarter October to December. The project commenced on 26th November 1997.

2. First name in the row is the Activity Leader

3-4

Activities	Targets/Indicators	Schedule																				Responsible persons In the project	Inputs	Remarks		
		1998				1999				2000				2001				2002								
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV					
3. Collect, synthesize and disseminate information on social forestry extension																										
3.1. Make preparations for information activities																										
3.1.1. Clarify information flow on social forestry extension	Report on information flow	█	█	█	█																		Ngige, Barasa, Akabane	Stationery	change of responsibl prsn	
3.1.2. Prepare guideline for information activities	Information management guideline		█	█	█																		Owour, Ngige, Segawa	Stationery	change of responsibl prsn	
3.2. Hold regular meetings	Number of meetings held	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Owour, Ngige, Akabane	Transport, allowance	change of responsibl prsn
3.3. Collect and analyze information from outside sources																										
3.3.1. Collect and analyze publications	Number of publications collected <i>make a catalogue</i>	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Nyambati, Kamene, Akabane <i>Mbiru</i>	computers, transport, room/cabinets	change of responsibl prsn
	Number of abstracts from publications <i>publications catalogue</i>	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█					
3.3.2. Exchange information with concerned institutions	Report of information exchanged	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Rateng, Akabane <i>Shirwa Jennifer</i>	computer, transportation, stationery, E-mail/internet	change of responsibl prsn
3.3.3. Collect and analyze successful cases of established farm forests	Number of case studies		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Nyambati, Ngige, Owour, Akabane	transport, stationery	change of responsibl prsn
3.4. Collect information accumulated through project activities																										
3.4.1. Keep record of project activities	Annual report	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Kamene, DFO, DFEO, Segawa	Stationery	change of responsibl prsn
3.4.2. Collect information from farmers or extension agents	Number of information sheets collected	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Kamene, DFEO, Akabane	Stationery	change of responsibl prsn
3.5. Develop extension materials for extension agents	Number of extension materials developed									█	█	█	█	█	█	█	█	█	█	█	█			Ngige, Rateng, Kamene, Mbiru, Akabane	computer, stationery, software	
3.6. Disseminate information through publications or events																										
3.6.1. Publish project newsletter	Number of newsletters issued <i>issue</i>	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Mbitu, Barasa, Akabane	Computer, stationery	change of responsibl prsn
3.6.2. Disseminate information through other media	Number of times media used <i>issue media report N/P.</i>		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Mbiru, Ngige, Barasa, Akabane	Stationery, Mailing cost	change of indicator & responsibl prsn
3.6.3. Hold seminar on social forestry	Number of seminars held Number of papers presented		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Owour, Ngige, Rateng, Akabane	Seminar expenses	change of responsibl prsn
3.6.4. Implement mobile show	Number of shows Number of attendance		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			Rateng, Kamene, DFEO, Akabane	AV equipment, Vehicle, travel cost, Stationery	change of responsibl prsn

Note: 1st quarter is January to March, 2nd quarter is April to June, 3rd quarter is July to September and 4th quarter is October to December. The project commenced on 26th November 1997.

List of P/O items changed

(from 1st revision, May 1999 to 2nd revision, April 2000)

Farm Forest Establishment (Extension section)

No	P/O	Old (1st revision)	P/O	New (2nd revision)	Reasons of change
1	2.2.5	Study of forestry extension status		deleted	Low priority
2	2.2.6	Literature review of establishment of farm forest		deleted and combined with 3.3.1	Duplicated activity
3	2.3	Formulate plan of farm forest establishment	2.3	Formulate strategic plan for promoting farm forest establishment by local residents	Re-formulation of strategies and activities to encourage active participation of the local residents in the project.
4			2.5	Establish farmer to farmer extension system	New activities undertaken to complete the project purpose, which is to develop social forestry extension model.
5			2.6.2	Conduct and monitor OJT programme	New activities undertaken to meet the wider demands of the local residents for learning various farm forestry related technologies.
6	2.8	Establish farm forests by extension agents		deleted and combined with 2.4	Re-formulation of strategies taking FD's position and the sustainability of the project activities into account.

Activities	Targets/Indicators	Schedule																Responsible persons in the project	Progress (%)	Distinguished Achievement	Problems and Countermeasures					
		1998				1999				2000				2001								2002				
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV					
1.1 Develop practical technique for establishment of farm forest in semi-arid areas																										
1.1 Develop technology in the Pilot Forest																										
1.1.1 Development of basic tree planting technologies																										
1.1.1.1 Seeds germination	Melia volkensii, Terminalia brownii																					Muok, Kyalo, Hayashi	60	data collection on going		
1.1.1.2 Root system	root pattern and drought tolerant																					Kyalo, Muok, Hayashi	90	preparing report		
1.1.1.3 Insect/disease control	Degree of damage comparison																					Kyalo, Muok, Kigwa, Hayashi, Mihara	50	data collection on going	Some trees were harvested by unknown people.	
1.1.2 Verification of intensive-planting management																										
1.1.2.1 Water catchment	optimum type, size/growth, erosion																					Kigwa, Muok, Mihara	70			
1.1.2.2 Mulching	necessity of mulching/ growth																					Kigwa, Muok, Mihara	70			
1.1.2.3 Weeding	optimum frequency/growth, survival clear weeding, slash/growth, survival																					Kigwa, Muok, Mihara	50			
																						Kigwa, Muok, Mihara	35	established new plot demarcation (0.58ha)		
1.1.2.4 Water regime																										
1.1.2.4.1 Soil moisture	1ha/treatment-soil moisture relations/growth																					Kigwa, Muok, Mihara	25			
1.1.2.4.2 Sun heat shield effect and mulching	0.3ha/effect of mulching/growth																					Kigwa, Muok, Mihara	20	awaiting some apparatus new plot established (0.26ha)	(Renew Sun heat shield)	
1.1.2.4.3 Water stress	pruning-water stress relations/correlation																					Kigwa, Muok, Mihara	40			
1.1.2.4.4 Evapo-transpiration	water consumption/sap flow																					Kigwa, Muok, Mihara	40	The machines have been installed by short term expert. Monitoring on going.		
1.1.3 Verification of planting technology																										
1.1.3.1 Monitoring of existing spacing plot	optimum spacing/growth, survival																					Kigwa, Muok, Mihara	40			
1.1.3.2 Study pruning of existing plot	effect of pruning/growth, survival																					Kigwa, Muok, Mihara	40			
1.1.3.3 Study thinning of existing plot	effect of thinning/growth, die-back																					Kigwa, Muok, Mihara	40			
1.1.3.4 Study coppicing of existing plot	coppicing ability /no. of coppices																					Kigwa, Muok, Mihara	30	new plot designed Coppicing carried out.	take basal area not mean diam	
1.1.4 Establishment of Wildfruits demonstration orchard																										
1.1.4 Establishment of Wildfruits demonstration orchard	trials on 20 spp./growth, marketability using grafting, cutting and mycorrhiza																					Kigwa, Muok, Mihara	40	one plot established consisting of 9 spp		
1.1.5 Supporting activity of technology development																										
1.1.5.1 Weather monitoring data	weather data/weather data																					Kyalo, Kigwa, Auka, Muok, Hayashi, Mihara	50	daily weather data		
1.1.5.2 Collection of references	references/no. of references																					Kigwa, Kyalo, Auka, Mihara, Hayashi	40	reference books		
1.1.5.3 Management of experimental plot and road network	road management, experimental plot management																					Kigwa, Auka, Mihara	40			
1.1.5.4 Seed collection, production and supply of seedling	necessary no. /no. of seedlings necessary weight/ weight of seed collected																					Kyalo, Hayashi	50	about 37,000 seedlings produced.	Salinity water during the dry season damaged seedlings.	
1.1.5.5 Management of Tiva arboretum	no. of spp./weight of seed supplied																					Kyalo, Hayashi	50			
1.1.5.6 Protection of human and animal damage	1000 ha/ decrease of damage/ number of damages																					Kigwa, Kyalo, Mihara, Hayashi	50	3 barners installed	tree poaching	
1.1.5.7 Study on work efficiency	work efficiency table/table																					Kigwa, Kyalo, Mihara, Hayashi	50	cost analysis		
1.1.6 Response to challenges in on-farm and extension	Feedback received and retested																					Kigwa, Muok, Auka, Mihara	0	New activities		

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The project commenced on 26th November 1997.

4-1

Activities	Targets/Indicators	Schedule																Responsible persons in the project	Progress (%)	Distinguished achievements	Problems and countermeasures				
		1998				1999				2000				2001								2002			
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV					I	II	III	IV
2.4 Establish farm forests																									
2.4.1 Train extension agents																									
2.4.1.1 Implement training courses	Number of TAs trained																					Kamene,Rateng,DFEOs, Nyambati, Osore, Hiro, Yamauchi, Hayashi	50	Trained TAs through training course (98 & 99) and study tour (00)	
2.4.1.2 Implement OJT through establishment of farm forests	Number of TAs trained																					DFEOs,Ali,Emily, Nyambati,Osore Hiro, Hayashi	30	Trained TAs	
2.4.2 Select target farmers	Number of selected target farmers																					DFEOs,Ali,Emily,Nyambati,Osore Hiro,Hayashi,	30	31 newly selected target farmers in 99	
2.4.3 Train target farmers	Number of target farmers trained																					Kamene,Rateng,DFEOs, Nyambati, Osore, Hiro, Yamauchi, Hayashi	30	Trained farmers through training course (98 & 99) and study tour (00)	
2.4.4 Conduct profile survey on selected targets	Number of target farm profiles																					DFEOs,Ali,Emily,Nyambati,Osore Nyambati, Hiro	30	Completed 37 farmers' profiles	
2.4.5 Design target farm forests	Number of designed farm forests																					DFEOs,Ali,Emily,Nyambati,Osore Hiro	30	Designed 37 farm forests	
2.4.6 Establish farm forests	Number of established farm forests																					DFEOs,Ali,Emily,Nyambati,Osore Hiro	30	Established 37 farm forests	
2.4.7 Monitor the establishment of farm forests	Number of times monitored / reports																					DFEOs,Ali,Emily,Nyambati,Osore Hiro	30	Revised monitoring sheet and compiled data	
2.4.8 Record keeping	Number of records																					DFEOs,Ali,Emily,Nyambati,Osore	30	Accumulated record through monitoring sheet and field note	
2.5 Establish farmer to farmer extension system																									
2.5.1 Prepare programme for farmer to farmer extension	Concept paper																					Ali, DFEOs Hiro	100	Produced concept paper	
2.5.2 Conduct and monitor farmer to farmer extension programme	Number of farmers trained																					Ali, Emily, DFEOs, Osore Hiro	0		
2.6 Improve demonstration plots in Tiva (DEMO II)																									
2.6.1 Develop and demonstrate practical farm forestry related technologies	Number of technologies demonstrated																					Osore, Nyambati, other team member Hiro	50	Improved DEMO II	
2.6.2 Conduct and monitor OJT programme	Number of people trained																					Osore, Nyambati, other team member Hiro	20	Trained farmers and students	
2.7 Feedback of technical knowledge of planting and tending into the technology development	Report including identified gaps																					Nyambati, Ali,Emily,Osore Hiro	20	Technical information provided to tec. dev. section	
2.8 Intermediate evaluation	Intermediate evaluation report																					Muok, Nyambati Hiro,Yamauchi,Hayashi	80	Preparatory work done for the mission	
2.9 Review of plan of farm forest establishment	Revised plan																					Muok, Nyambati Hiro,Yamauchi,Hayashi Hiro	100	Revised P/O	
2.10 Final evaluation and compilation of the result of the activities	Final evaluation report																					Muok, Nyambati Hiro,Yamauchi,Hayashi	0		

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2. First name in the row is the Activity Leader

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.1. Develop technology in the Pilot Forest

1.1.1. Development of basic tree planting technologies

1.1.1.1. Seeds germination

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p style="text-align: center;"><u>Seed germination</u> (P.O. 1.1.1.1.)</p>	<p><u>Plan</u></p> <ol style="list-style-type: none"> 1. test germination of <i>Melia volkensii</i> 2. test germination of <i>Terminalia brownii</i> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. Germination trial of seeds and root propagation of <i>Melia volkensii</i> has been tested. <u>Achievement:60%</u> 2. Germination trial of seeds of <i>Terminalia brownii</i> has been tested. <u>Achievement:50%</u>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<ol style="list-style-type: none"> 1-1. Seeds of <i>M.volkensii</i> collected from goat boma showed good germination performance. 1-2. An experiment has been carried out to determine the effect of age of pricking out on the early survival of seedlings in the nursery. The other experiment is vegetative propagation trial using root cuttings with different concentration of IBA. 2-1. Seeds collected from Homabay has been tested for germination with different pre-germination treatments.
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	<p>No constraint</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.1. Develop technology in the Pilot Forest

1.1.1. Development of basic tree planting technologies

1.1.1.2. Root system

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Root system</u> (P.O. 1.1.1.2.)</p>	<p><u>Plan</u></p> <p>1. Depth and width of root system and Tree/Root weight ratio shall be measured and root system shall be drawn.</p> <hr/> <p><u>Achievement</u></p> <p>1. Field survey was completed in November 1997 plot.</p> <p><u>Achievement:90%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>1. Eight species(<i>Grewia aricantha</i>, <i>Acacia sieberiana</i>, <i>Psidium guajava</i>, <i>A. auriculiformis</i>, <i>Zyziphus mauritiana</i>, <i>Carica papaya</i>, <i>Perusea americana</i>, <i>Vitex doniana</i>) were surveyed in 1998 and 1999.</p>
<p>CONSTRAINTS (Countermeasures)</p>	<p>1. Field survey was finished and preparing report is remaining.</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.1. Develop technology in the Pilot Forest

1.1.1. Development of basic tree planting technologies

1.1.1.3. Insect/disease control

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p><u>Insect/disease control</u> (P.O. 1.1.1.3.)</p>	<p><u>Plan</u></p> <p>1. Test to determine the effectiveness of cheaper local materials in controlling termite damage.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>1. A new experiment was started in November 1999. <u>Achievement:50%</u></p>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<p>1. The target species are <i>Eucalyptus camaldulensis</i>, <i>Casualina equisetifolia</i> and <i>Grevillea robusta</i>. The treatments were charcoal, tobacco, wood vinegar, <i>Albizia anthelmintica</i> solution, <i>Azadirachta indica</i> solution, etc. Chemicals such as Confidor and Suscon were also included as treatments for comparison with the local materials.</p> <p>2. In the new experiment, treatments are;</p> <ul style="list-style-type: none"> - tobacco powder - tobacco+chili+Omo - Neem cake
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	<p>1. Livestock(cows and goats) browse trees in the experiment sites during the night and makes it difficult to collect adequate data.</p>

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .

1.1 Develop technology in the pilot forest

1.1.2 Verification of intensive planting management

1.1.2.1 Water catchment

ITEM	
<p>OUTPUT</p> <p>technology Development</p> <p>Water catchment (P.O. - 1.1.2.1)</p>	<p><u>Plan</u></p> <ol style="list-style-type: none"> 1. Collection of data the determined optimum type of water catchment structure in relation to growth 2. Collection of data to determine optimum size of water catchment structure in relation to growth <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. Data collected as scheduled - 70% achieved 2. Data collected as scheduled - 70 % achieved
<p>ACTIVITIES (PROGRESS)</p>	<ol style="list-style-type: none"> 1. Data collection continues 2. Data collection continues
<p>CONSTRAINTS (COUNTERMEASURE)</p>	<ol style="list-style-type: none"> 1. No. constraints 2. No. constraints

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
- 1.1 Develop technology in the Pilot Forest
 - 1.1.2 Verification of intensive planting management
 - 1.1.2.2 Mulching

ITEM	
<p>OUTPUT</p> <p>technology Development</p> <p>Mulching (P.O. - 1.1.2.2)</p>	<p><u>Plan</u></p> <p>1. Effect of mulching on growth of <i>Senna siamea</i> This is not be verified once per year</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>Data collected as scheduled - 50 % achieved</p>
<p>ACTIVITIES (PROGRESS)</p>	<p>1. Data collection continues</p>
<p>CONSTRAINTS (COUNTERMEASURE)</p>	<p>1. No. constraints</p>

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .

- 1.1 Develop technology in the pilot forest

- 1.1.2 Verification of intensive planting management

- 1.1.2.3 Weeding

ITEM	
<p>OUTPUT</p> <p>Technology Development</p>	<p><u>Plan</u></p> <ol style="list-style-type: none"> 1. Compare the effect of different weeding methods on growth and survival of Senna siamea 2. Compare the effect of clear weeding and slashing method on the growth and survival of Senna siamea <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. The experiments plot was established - 35% achieved
<p>ACTIVITIES (PROGRESS)</p>	<ol style="list-style-type: none"> 1. Initial data has been taken 2. Data (assessment) will continue monthly
<p>CONSTRAINTS (COUNTERMEASURE)</p>	<ol style="list-style-type: none"> 1. Planting of the plot was carried out in November 1999

Record of the 2nd monitoring ; Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
 - 1.1 Develop technology in the pilot forest
 - 1.1.2 Verification of intensive planting management
 - 1.1.2.4 Water regime
 - 1.1.2.4.1 Soil moisture

ITEM	
<p>OUTPUT</p> <p>technology Development</p> <p>Soil moisture</p> <p>(P.O. - 1.1.2.4. 1)</p>	<p><u>Plan</u></p> <p>The effect of soil moisture on growth of Senna siamea This verification is done once every month The area of the plot is 1 hectare</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>1. Data collection resumed in March 2000 after establishment of new experimental plot - 25% achieved</p>
<p>ACTIVITIES</p> <p>(PROGRESS)</p>	<p>1. Data collection continues</p>
<p>CONSTRAINTS</p> <p>(COUNTERMEASURE)</p>	<p>Data collection has resumed</p>

Record of the 2nd monitoring ; Description of each item of the P.O.

1. Develop practical techniques for establishment of Farm in forest in Semi-Arid- Areas .
 - 1.1 Develop technology in the pilot forest
 - 1.1.2 Verification of intensive planting management
 - 1.1.2.4 Water regime
 - 1.1.2.4.2 Sun- Heat shield effect and mulching

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Sun- heat shield effect and mulching (P.O. - 1.1.2.4.2)</p>	<p><u>Plan</u></p> <p>The effect of sun-Heat shield and mulching on growth of <i>Senna siamea</i> The area of the plot is 0.26 hectares</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>The experimental plot has been established (Nov,1999) as the design - 40% achieved</p>
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<p style="text-align: center;">Initial data has been carried out in March 2000</p>
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<ol style="list-style-type: none"> 1. The experimental plot was established 2. Initial data has been taken

Record of the 2nd monitoring ; Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
 - 1.1 Develop technology in the pilot forest
 - 1.1.2 Verification of intensive planting management
 - 1.1.2.4 Water regime
 - 1.1.2.4.3 Water stress

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Water stress (P.O. - 1.1.2.4. 3)</p>	<p><u>Plan</u></p> <p>Effect of pruning on plant water relations (Water stress) This research is carried out 3 times a year</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>Data collected as scheduled - 40% achieve This year research carried out once</p>
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<p>1. Data collection continues</p>
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<p>1. No constraints.</p>

Record of the 2nd monitoring ; Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in forest in Semi-Arid- Areas .

1.1 Develop technology in the pilot forest

1.1.2 Verification of intensive planting management

1.1.2.4 Water regime

1.1.2.4.4 Evapotranspiration

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Evapotranspiration (P.O. - 1.1.2.4.4)</p>	<p><u>Plan</u></p> <p>Effect of evapotranspiration on water consumption and sap flow This research is carried out once per year</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u> :</p> <p>Machine have will be installed by short term expert in the course of the project period when the trees attain a reasonable diameter - 40%</p>
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<ol style="list-style-type: none"> 1. Heat pulse machine will be installed later 2. Soil moisture probes have been installed 3. Soil permeability test being conducted will be reconnected this year in the new experimental plot 4. Evapotranspiration cuts will be installed in the new experimental plots
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<p>none</p>

Record of the 2nd monitoring ; Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in forest in Semi-Arid- Areas .
 - 1.1 Develop technology in the pilot forest
 - 1.1.3 Verification of intensive planting management
 - 1.1.3.1 Monitoring of existing spacing plot

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Monitoring of existing spacing plot (P.O. - 1.1.3.1)</p>	<p><u>Plan</u></p> <p>Effect of spacing on growth and survival of <i>Senna siamea Senegal</i> This research is done once per year</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>Data collected as schedule -40 % achieved.</p>
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<p>1. Data collection continues</p>
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<p>1. No constraints</p>

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
 - 1.1 Develop technology in the pilot forest
 - 1.1.3 Verification of intensive planting management
 - 1.1.3.2 Study pruning of existing plot

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Study pruning of existing plot (P.O. - 1.1.3.2)</p>	<p><u>Plan</u></p> <p style="text-align: center;">Effect of pruning on growth and survival of <i>Senna siamea</i> and <i>Dalbergia melanoxylon</i></p> <ol style="list-style-type: none"> 1. On the old plot of <i>Senna siamea</i> 2. Two new plots <i>Senna siamea</i> and <i>Dalbergia melanoxylon</i> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. 2nd pruning 40% achieved will be done later during the project period 2. Second pruning will carried out during the project period 40% achieved
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<ol style="list-style-type: none"> 1. Data collection of the new plots have been carried out 2. Old plot data already collected
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<ol style="list-style-type: none"> 1. No constraints 2. No constraints

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
 - 1.1 Develop technology in the pilot forest
 - 1.1.3 Verification of intensive planting management
 - 1.1.3.3 Study thinning of existing plot

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Study thinning of existing plot (P.O. - 1.1.3.3)</p>	<p><u>Plan</u></p> <ol style="list-style-type: none"> 1. Effect of thinning of growth and die back incidence of <i>Senna siamea</i> and <i>A. indica</i> 2. New plot - Research postponed to December 2000 3. Construction of volume table of <i>Senna siamea</i> and <i>A. indica</i> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. Target plots identified - 40 % achieved 2. No achievement due to postponement because the plot had very small trees 3. Plots identified and trees marked -40 % achieved
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<ol style="list-style-type: none"> 1. None 2. Thinning postponed - tree still too young 3. Data collection continues for <i>Senna siamea</i>
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<ol style="list-style-type: none"> 1. No constraints 2. The plots were too young to be thinned. Thinning postponed to December 2000. No. ready plot for <i>A. indica</i> 3. No constraints

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .

- 1.1 Develop technology in the pilot forest

- 1.1.3 Verification of intensive planting management

- 1.1.3.4 Study Coppicing of existing plot

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Study Coppicing existing plot (P.O. - 1.1.3.4)</p>	<p><u>Plan</u></p> <p>1. Coppicing ability of Senna siamea</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>Coppicing done - 40% achieved</p>
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<p>1. Data collection has already started</p>
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<p>1. No. constraints</p>

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .

1.1 Develop technology in the pilot forest

1.1.4 Establishment of wild fruit demonstration orchard

ITEM	
<p>OUTPUT</p> <p>technology Development</p> <p>Establishment of demonstration orchard (P.O. - 1.1.4)</p>	<p><u>Plan</u></p> <p>1. Establishment of Wild fruits demonstration orchard</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>9 species planted - The area of this plot is 1.04 hectares - 40 % achieved</p>
<p>ACTIVITIES (PROGRESS)</p>	<p>Plot maintenance on-going (Weeding taking place)</p>
<p>CONSTRAINTS (COUNTERMEASURE)</p>	<p>Some seeds difficult to obtain. (constraints) Collaborate with other institutions get seeds.(countermeasure)</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.1. Develop technology in the Pilot Forest

1.1.5. Supporting activity of technology development

1.1.5.1. Weather monitoring data

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Weather monitoring data</u> (P.O. 1.1.5.1.)</p>	<p><u>Plan</u></p> <p>1. Continue collecting weather (temperature and rainfall) data in Tiva nursery and the Pilot Forest.</p> <hr/> <p><u>Achievement</u></p> <p>1. Temperature and rainfall data in Tiva nursery have been recorded since Nov. 1988. Temperature, rainfall, humidity and radiation data in the Pilot Forest have been recorded since Nov. 1997. <u>Achievement:50%</u> (in case that achievement be 100% at the end of the project period(5 years period))</p>
<p>ACTIVITIES (Progress)</p>	<p>1. The highest-lowest thermometer and automatic rain gauge are set in Tiva nursery. In the Pilot Forest, probes were installed and data are recorded by data logger. An electronic simple rain gauge was installed in front of the dormitory in the KEFRI Kitui Center.</p>
<p>CONSTRAINTS (Countermeasures)</p>	<p>No constraints.</p>

Record of the 2nd monitoring ; Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
 - 1.1 Develop technology in the pilot forest
 - 1.1.5 Supporting activity of technology development
 - 1.1.5.1 Weather monitoring data

ITEM	
OUTPUT	<p><u>Plan</u></p> <p>Collection of weather data</p>
<p>technology Development</p> <p>Weather monitoring data (P.O. - 1.1.5.1)</p>	<p><u>Achievement</u></p> <p>Weather data collected as scheduled 50 % achieved</p>
ACTIVITIES (PROGRESS)	Data collection continues
CONSTRAINTS (COUNTERMEASURE)	Data logger was installed in new experimental plot

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
- 1.1 Develop technology in the pilot forest
 - 1.1.5 Supporting activity of technology development
 - 1.1.5.2 Collection of references

ITEM	
OUTPUT	<p><u>Plan</u></p> <p>Collection of reference materials This is still in progress</p>
<p>technology Development</p> <p>Collection of references (P.O. - 1.1.5.2)</p>	<p><u>Achievement</u></p> <p>70 books acquired - 50% achieved</p>
ACTIVITIES (PROGRESS)	<p>Reference material collection continues.</p>
CONSTRAINTS (COUNTERMEASURE)	<p>No constraints</p>

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
- 1.1 Develop technology in the pilot forest
- 1.1.5 Supporting activity of technology development
- 1.1.5.3 Management of experimental plot and road network

ITEM	
<p>OUTPUT</p> <p>technology Development</p> <p>Management of experimental plot and road net work (P.O. - 1.1.3.3)</p>	<p><u>Plan</u></p> <p>Management of experimental plots and road network</p> <ol style="list-style-type: none"> 1. Trial maps, trial sign board and trial registers 2. Road map, road signboards and road registers <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. Trial maps and trial registers are being compiled Trial signboards to be erected 40% achieved 2. Road maps and road registers are compiled Road signboards to be erected 40% achieved
<p>ACTIVITIES (PROGRESS)</p>	<ol style="list-style-type: none"> 1. Preparing trial signboards 2. Preparing trial signboards
<p>CONSTRAINTS (COUNTERMEASURE)</p>	<ol style="list-style-type: none"> 1. No constraints 2. No constraints

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.1. Develop technology in the Pilot Forest

1.1.5. Supporting activity of technology development

1.1.5.4. Seed collection, production and supply of seedling

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p style="text-align: center;"><u>Seed collection, production and supply of seedling</u> (P.O. 1.1.5.4.)</p>	<p><u>Plan</u></p> <ol style="list-style-type: none"> 1. Identify mother trees and collect high quality seed. 2. To produce and supply seedlings for the project in Tiva nursery. <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. Seed procurement was done by collecting and buying seeds within and around Kitui area. <u>Achievement:50%</u> 2. About 20000 seedling in 1998 and 17000 seedlings in 1999 were produced and distributed for project activities. <u>Achievement:50%</u>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<ol style="list-style-type: none"> 1. Collection dates, collected area and quantity of seeds are recorded. 2. Among the seedlings produced in 1998, 500 for the Pilot forest, 1,100 for the On-farm experiment, 600 for extension and training, 6,700 for farmers and others, totally 12,000 were distributed. 3. Among the seedlings produced in 1999, 700 for the Pilot forest, 700 for On-farm, 800 for extension and training, 8,700 for farmers were distributed and 3,100 were sold to farmers.
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	<ol style="list-style-type: none"> 1. There are no clear standards of selecting mother trees because there are no common understanding of what a "good" tree is. The list of mother trees has not been utilized well. 2. Annual plan of producing seedlings is necessary, considering the planting plan in each section in the project and farmers needs.

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.1. Develop technology in the Pilot Forest

1.1.5. Supporting activity of technology development

1.1.5.5. Management of Tiva arboretum

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p style="text-align: center;"><u>Management of Tiva arboretum</u> (P.O. 1.1.5.5.)</p>	<p><u>Plan</u></p> <p>1. To manage and maintain Tiva arboretum and seed stands located next to Tiva nursery.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>1. Tending has not been done this year on the arboretum. <u>Achievement:0%</u></p> <p>2. Weeding, slashing and pruning were done at the seed stands. <u>Achievement:50%</u></p>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<p>1. Weeding, slashing and pruning were done at the seed stands.</p> <p>2. Since <i>Acacia holosericea</i> trees died, seedlings or other species were planted in Nov. 1999. The species are <i>Dalbergia sisso</i>, <i>Eucalyptus camaldurensis</i> and <i>Prosopis pallida</i>.</p>
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	<p>1. Labels should be placed to make it more informative.</p>

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
- 1.1 Develop technology in the pilot forest
- 1.1.5 Supporting activity of technology development
- 1.1.5.6 Protection of human and animal damage

ITEM	
<p>OUTPUT</p> <p>technology Development</p> <p>Protection of human and animal damage</p> <p>(P.O. - 1.1.5.6)</p>	<p><u>Plan</u></p> <p>Protection of human and animal damage</p> <ol style="list-style-type: none"> 1. Patrolling/erection of Road barriers 2. Erection of dead fence around plots <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. The three barriers were repaired Patrolling intensified 25% achieved 2. Reinforcement of plot fences - 50% achieved
<p>ACTIVITIES</p> <p>(PROGRESS)</p>	<ol style="list-style-type: none"> 1. Patrolling to continued 2. Fencing of plots to continue
<p>CONSTRAINTS</p> <p>(COUNTERMEASURE)</p>	<ol style="list-style-type: none"> 1. Poaching of Mellia volkensii and Eucalyptus(constraints) 2. Illegal grazing(constraints) Intensification of patrolling(countermeasures)

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .
- 1.1 Develop technology in the pilot forest
- 1.1.5 Supporting activity of technology development
- 1.1.5.7 Study on work efficiency

ITEM	
<p>OUTPUT</p> <p>technology Development</p> <p>Study on work efficiency</p> <p>(P.O. - 1.1.5.7)</p>	<p><u>Plan</u></p> <p>Study on work efficiency Daily work Report on a daily basis</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>Data collected as scheduled using daily work report - 50% achieved</p>
<p>ACTIVITIES (PROGRESS)</p>	<p>Data collection daily Started Analysis for the already collected data have</p>
<p>CONSTRAINTS (COUNTERMEASURE)</p>	<p>No constraints</p>

Record of the 2nd monitoring ;

Description of each item of the P.O.

1. Develop practical techniques for establishment of farm forest in Semi-Arid- Areas .

- 1.1 Develop technology in the pilot forest

- 1.1.6 Response to challenge in on-farm and extension

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>technology Development</p> <p>Response to challenges in on-farm and extension</p> <p>(P.O. - 1.1.6)</p>	<p><u>Plan</u></p> <ol style="list-style-type: none"> 1. To monitor the response to challenges in on-farm and extension 2. To check the feedback received and retest the challenges if any <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p style="text-align: center;">None</p>
<p style="text-align: center;">ACTIVITIES (PROGRESS)</p>	<p style="text-align: center;">A waiting challenges from on-farm and extension sections of the project</p>
<p style="text-align: center;">CONSTRAINTS (COUNTERMEASURE)</p>	<p style="text-align: center;">None</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.1. Farmers selection

1.2.1.1. Collection of physical and weather condition data

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p><u>Collection of physical and weather condition data</u> (P.O. 1.2.1.1.)</p>	<p><u>Plan</u> 1. To conduct resource survey, including an interview of farmers and data collection of vegetation, soil type and weather.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u> 1. The resource survey was conducted and report produced. <u>Achievement: 100%</u></p>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<p>1. "Socio-Economic and Resource survey of Kitui District report" was produced as an output of this activity in June 1998.</p>
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.1. Farmers selection

1.2.1.2. Selection of representative farmers

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p><u>Selection of representative farmers</u> (P.O. 1.2.1.2.)</p>	<p><u>Plan</u> 1. Select farmers where On-farm experiment is carried out.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u> 1. Three farmers for 1998 On-farm experiment and six farmers for 1999 were selected. <u>Achievement:60%</u></p>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<p>1. In 1999, one from Central Division, one from Kabati, two from Chuluni and two from Mutomo(Ikanga) were selected in consideration of;</p> <ul style="list-style-type: none"> a) location b) adequate land to conduct experiment, and c) farmers willingness.
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.1. Farmers selection

1.2.1.3. Technology workshop for selected farmers

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Technology workshop for selected farmers</u> (P.O. 1.2.1.3.)</p>	<p><u>Plan</u> 1. Hold a technology workshop on farm forest for selected farmers.</p> <hr/> <p><u>Achievement</u> 1. The second workshop was held from 13 to 15 October 1999. <u>Achievement:66%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>1. Participants were, 9 farmers for On-farm experiment, 37 farmers for farm forest, technical agents and DFEO.</p>
<p>CONSTRAINTS (Countermeasures)</p>	<p>1. October is not a suitable month for the farmers because they are busy for preparing their land for the coming rain.</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.2. Verification of the technologies developed in the Pilot Forest

1.2.2.1. Water harvesting (Micro-catchment)

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Water harvesting</u> <u>(Micro-catchment)</u> (P.O. 1.2.2.1.)</p>	<p><u>Plan</u></p> <p>1. Test the type of micro-catchment in the On-farm experiment and find a suitable one for better result in ASAL.</p> <hr/> <p><u>Achievement</u></p> <p>1. Trees were planted in the three experimental plots in Nov.1988 and one experimental plot in Nov. 1999. Monitoring is going on.</p> <p><u>Achievement:50%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>1. The species planted were <i>Grevillea robusta</i> in 1998 and <i>Senna siamea</i> in 1999. The treatments were a) V-shape, b) W-shape and c) control. The same experiment was replicated in each of the four farmers' plot.</p> <p>2. Data to be monitored are a) survival ratio, b) height and c) diameter at ground. The duration of monitoring is three months interval.</p>
<p>CONSTRAINTS (Countermeasures)</p>	<p>It is useful to measure the work norm to make V and W shape micro-catchment.</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.2. Verification of the technologies developed in the Pilot Forest

1.2.2.2. Site preparation

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Site preparation</u> (P.O. 1.2.2.2.)</p>	<p><u>Plan</u></p> <p>1. Test the different methods of site preparation in On-farm experiment and to determine the suitable method.</p> <hr/> <p><u>Achievement</u></p> <p>1. Trees were planted in the three experimental plots in Nov.1988. Monitoring is going on.</p> <p><u>Achievement:50%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>1. The species planted was <i>Melia volkensii</i>. The treatments were, a) oxen plough, b) hand plough and c) control. The same experiment was replicated in each of the farmer's plot.</p> <p>2. Data to be monitored are a) survival ratio, b) height and c) diameter at ground. The duration of monitoring is three months interval.</p>
<p>CONSTRAINTS (Countermeasures)</p>	

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.2. Verification of the technologies developed in the Pilot Forest

1.2.2.3. Hole size

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Hole size</u> (P.O. 1.2.2.3.)</p>	<p><u>Plan</u></p> <p>1. Test different hole sizes in the On-farm experiment and find an optimum hole size.</p> <hr/> <p><u>Achievement</u></p> <p>1. Trees were planted in the three experimental plots in Nov.1988. Monitoring is going on.</p> <p><u>Achievement:50%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>1. The species planted was <i>Azadirachta indica</i> in 1998. The treatments were a) 20*20cm, b) 45*45cm and c) 60*60cm. The same experiment was replicated in each of the three farmers' plot.</p> <p>2. Data to be monitored are a) survival ratio, b) height and c) diameter at ground. The duration of monitoring is three months interval.</p>
<p>CONSTRAINTS (Countermeasures)</p>	

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.2. Verification of the technologies developed in the Pilot Forest

1.2.2.4. Weeding (complete, slashing, spot)

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Weeding</u> <u>(complete, slashing, spot)</u> (P.O. 1.2.2.4.)</p>	<p><u>Plan</u></p> <p>1. Test different methods of weeding in the On-farm experiment to determine a suitable method.</p> <hr/> <p><u>Achievement</u></p> <p>1. Trees were planted in two experimental plots in Nov. 1999. Monitoring is going on. <u>Achievement:33%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>3. The species planted were <i>Azadirachta indica</i> and <i>Senna siamea</i>. The treatments were, a) complete weeding, b) spot weeding and c) slashing. The experiment was replicated in each of the two farmers' plot.</p> <p>4. Data to be monitored are a) survival ratio, b) height and c) diameter at ground. The duration of monitoring is three months interval.</p>
<p>CONSTRAINTS (Countermeasures)</p>	

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.2. Verification of the technologies developed in the Pilot Forest

1.2.2.5. Pruning

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p style="text-align: center;"><u>Pruning</u> (P.O. 1.2.2.5.)</p>	<p><u>Plan</u></p> <p>1. Test different pruning height in an On-farm experiment and to determine the optimum pruning height.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>1. Nothing has been done. <u>Achievement:0%</u></p>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	<p>1. This item shall be done from the 4th year of the Project. The experiment shall be done using the plot of 1998 and 1999. However, the plots are still young.</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.3. Introduction of new technology

1.2.3.1. Fruit trees

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Fruit trees</u> (P.O. 1.2.3.1.)</p>	<p><u>Plan</u></p> <p>1. Test and find a suitable species / varieties in an On-farm experiment.</p> <hr/> <p><u>Achievement</u></p> <p>1. Grafted seedlings of fruit species were planted in nine on-farm experiment farmers. Achievement:50% (the second year of four years duration)</p>
<p>ACTIVITIES (Progress)</p>	<p>1. Grafted seedlings of <i>Mangifera indica</i> and citrus species were planted in three farmers in 1998. The names of the varieties of mangoes are Apple, Tommy and Harden. Those of citrus species are Washington navel and Tangerine.</p> <p>2. Grafted seedlings of <i>M. indica</i> were also planted in 6 farmers in 1999. The varieties are Apple, Tommy, Harden, Ngowe, Sensation and Kent.</p>
<p>CONSTRAINTS (Countermeasures)</p>	

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.3. Introduction of new technology

1.2.3.2. Fodder trees

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Fodder trees</u> (P.O. 1.2.3.2.)</p>	<p><u>Plan</u></p> <p>1. Test and identify suitable fodder tree species in the On-farm experiment.</p> <hr/> <p><u>Achievement</u></p> <p>1. Five fodder species were planted in four on-farm experiment farmers in 1999. <u>Achievement:33%</u> (the first year of three years duration)</p>
<p>ACTIVITIES (Progress)</p>	<p>1. The species planted were <i>Leucaena leucocephala</i>, <i>Prosopis juliflora</i>, <i>Prosopis pallida</i>, <i>Calliandra calothyrsus</i> and <i>Melia volkensii</i>. 2. Some are planted as line planting and others are planted as 3.5 by 3.5 m. Corns and peas were planted among the trees by some farmers.</p>
<p>CONSTRAINTS (Countermeasures)</p>	<p>Some <i>p.pallida</i>, <i>p.juliflora</i> are attacked by scale insects and dik diks. Some <i>L.leucocephala</i> are attacked by termites.</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.2. Verify practical technologies by on-farm experiments

1.2.1. Weather monitoring and soil sampling

ITEM	
OUTPUT (farm forest establishment (technology))	<u>Plan</u> 1. To collect rainfall data on On-farm experiment. 2. To carry out soil survey on On-farm experiment.
<u>Weather monitoring and soil sampling</u> (P.O. 1.2.4)	<u>Achievement</u> 1. Simple rain gauges were installed in 20 farmers in the project target area. Monitoring is on going. <u>Achievement: 40%</u> 2. Soil profile survey was conducted. <u>Achievement: 80%</u>
ACTIVITIES (Progress)	1. The rain gauges were installed in 6 farmers in 1998 and 14 farmers in 1999 including Mutomo division. 2. Soil profile survey was done by Dr. Takato, a short-term expert for soil survey. He surveyed 30 farmers and classified 6 types of soil.
CONSTRAINTS (Countermeasures)	

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.3. Prepare technical manuals

1.3.1. Data collection and management

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p style="text-align: center;"><u>Data collection and management</u> (P.O. 1.3.1.)</p>	<p><u>Plan</u></p> <p>1. To collect and file the data from all experimental plots including those of the previous projects.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>1. The data of previous projects has been collected and filed.</p> <p><u>Achievement:20%</u></p>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<p>1. Available data of past experiments are being collected and filed by each item.</p>
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	<p>1. Information on the experiment such as place and data could not be identified in many cases.</p> <p>2. Some data have been missing.</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.3. Prepare technical manuals

1.3.2. Data analysis

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Data analysis</u> (P.O. 1.3.2.)</p>	<p><u>Plan</u></p> <p>1. To analyze collected data in order to prepare manuals.</p> <hr/> <p><u>Achievement</u></p> <p>1. Some of available data have been compiled.</p> <p><u>Achievement:20%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>1. Available information are being collected by each sector.</p>
<p>CONSTRAINTS (Countermeasures)</p>	<p>1. Available data of the Technology development sector are not enough for analyzing and compiling some of the manuals and need to be covered with data of other sources.</p>

Record of the 2nd monitoring; Description of each item of the P.O.

1. Develop practical technique for establishment of farm forest in semi-arid area

1.3. Prepare technical manuals

1.3.3. Preparation of manuals

ITEM	
<p style="text-align: center;">OUTPUT (farm forest establishment (technology))</p> <p><u>Preparation of manuals</u> (P.O. 1.3.3.)</p>	<p><u>Plan</u> 1. Prepare 13 manuals. (Increase of the number of manuals from 3 to 13 was proposed in July 1999.)</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u> 1. A manual on seed collection was compiled and published.</p> <p><u>Achievement:8%</u></p>
<p style="text-align: center;">ACTIVITIES (Progress)</p>	<p>1. Preparation of some manuals is going on.</p>
<p style="text-align: center;">CONSTRAINTS (Countermeasures)</p>	<p>1. Time constraint among the persons in charge.</p>

SOFEM
Record of the 1st Monitoring 1999

Description of each item of the PO :

- 2 Design, establish, monitor and evaluate farm forest
- 2.1 Establish farm forest in SFTP (II) target area
- 2.1.1 Select target farmers

Section : Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (PO 2.1.1)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> ● Six farmers to be selected from the previous SFTP (II) target areas for farm forest establishment. <hr/> <p><u>Achievement (100 %)</u></p> <ul style="list-style-type: none"> ● Two farmers per division in the three division (Central, Kabati and Chuluni) totaling to six farmers were selected.
<p style="text-align: center;">Activities (Progress)</p>	<p>This included :</p> <ul style="list-style-type: none"> ● Pre-selection survey using existing data from previous SFTP (II). ● The first selection survey by the project technical assistants. ● The second selection survey by the project senior staff. ● The final selection using some criteria based on the data collected from the second selection.
<p style="text-align: center;">Constraints & Countermeasures</p>	<p>None</p>

SOFEM
Record of the 1st Monitoring 1999

Description of each item of the PO :

- 2 Design, establish, monitor and evaluate farm forest
- 2.1 Establish farm forest in SFTP (II) target area
- 2.1.2 Conduct profile survey on selected targets

Section : Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (PO 2.1.2)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> ● Collect detailed information on the six selected farmers to understand the farmers' status quo and to capture farmers' needs. <hr/> <p><u>Achievement (100 %)</u></p> <ul style="list-style-type: none"> ● Profile survey was conducted on the six target farmers and important information to be reflected for designing farm forests were collected and compiled.
<p style="text-align: center;">Activities (Progress)</p>	<p>This included:</p> <ul style="list-style-type: none"> ● Interview to farmers using on already prepared questionnaire. ● Compass measurement and sketch mapping of the farmers land.
<p style="text-align: center;">Constraints & Countermeasures</p>	<p style="text-align: center;">None</p>

SOFEM

Record of the 1st Monitoring 1999

Description of each item of the PO :

- 2 Design, establish, monitor and evaluate farm forest
- 2.1 Establish farm forest in SFTP (II) target area
- 2.1.3 Design target farm forests

Section : Farm Forest Establishment (Extension)

<p>OUTPUT (PO 2.1.3)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> ● Design farm forests on the six selected farmers based on their needs and preferences. <hr/> <p><u>Achievement (100 %)</u></p> <p>The six farm forests were designed and compiled as scheduled.</p> <p>The types of tree planting designed included:</p> <ul style="list-style-type: none"> ● windbreak. ● woodlot ● fruit orchard ● live fencing ● borderline <p>Suitable species to be planted for the above-mentioned types of tree plantings were decided.</p> <p>Hole sizes were 60 x 60 cm for fruit orchard and 45 x 45 cm for others.</p> <p>Spacing were 5 x 5 m for fruit orchard and 4 x 4 m for others except for live fencing (50 x 50 cm).</p> <p>Trench method was also applied for live fencing.</p>
<p>Activities (Progress)</p>	<p>This included:</p> <ul style="list-style-type: none"> ● Identification of the planting sites. ● Species selection. ● Measurement of planting sites and designing layout of the trees planted. ● Staking of the plots. <p>All the works above-mentioned were done together with farmers.</p>
<p>Constraint & Countermeasures</p>	<p>None</p>

SOFEM
Record of the 1st Monitoring 1999

Description of each item of the PO :

- 2 Design, establish, monitor and evaluate farm forest
- 2.1 Establish farm forest in SFTP (II) target area
- 2.1.4 Establish farm forests

Section : Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (PO 2.1.4)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> ● The six target farm forests to be established based on the design made with farmers. <hr/> <p><u>Achievement (100 %)</u></p> <ul style="list-style-type: none"> ● All the six farm forests were established as scheduled. ● A total of 675 seedlings of 11 species were planted. These are : <i>M. indica</i> (grafted), <i>C. papaya</i>, <i>Citrus cinensis</i> (budded), <i>G. robusta</i>, <i>S. siamea</i>, <i>M. volkensii</i>, <i>D. caffra</i>, <i>C. lusitanoca</i>, <i>C. cunninghamoana</i>, <i>Ficus benjamina</i> and <i>A. indica</i>.
<p style="text-align: center;">Activities (Progress)</p>	<p>This included :</p> <ul style="list-style-type: none"> ● Provision of technical assistance, both theoretically and practically, for all the necessary process to establish farm forests. (site preparation, pitting, soil mixing with manure, soil refilling, construction of water catchment, planting and bottle watering) ● Distribution of some seedlings, mainly improved fruit trees which were not easily available.
<p style="text-align: center;">Constraints & Countermeasures</p>	<p>None</p>

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the PO :

- 2 Design, establish, monitor and evaluate farm forest
- 2.1 Establish farm forest in SFTP (II) target area
- 2.1.5 Monitor the establishment of farm forests

Section : Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (PO 2.1.5)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> ● Monthly monitoring of the six target farm forests after establishment up to the end of the project period. <hr/> <p><u>Achievement (50 %) activity is still ongoing.</u></p> <ul style="list-style-type: none"> ● Up to date, 24 monitoring sheets (4 per farmer) have been filled. ● Field information notebooks were installed to all six farmers' place to supplement monthly monitoring and to record any findings observed by any visitors.
<p style="text-align: center;">Activities (Progress)</p>	<ul style="list-style-type: none"> ● Preparation of monitoring sheet. ● Monthly monitoring by the project TAs and DFEO. ● Compilation of data collected from monitoring sheet and from field information notebooks.
<p style="text-align: center;">Constraints & Countermeasures</p>	<p>Some few problems have so far noted.</p> <ul style="list-style-type: none"> ● Termite attack (ash was applied to protect seedlings) ● Nematodes and caterpillar on citrus ● Several C. papaya turning up to be male (operation for changing sex and replacing were done)

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the PO :

- 2 Design, establish, monitor and evaluate farm forest
- 2.1 Establish farm forest in SFTP (II) target area
- 2.1.6 Record keeping

Section : Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (PO 2.1.6)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> ● Keep record of all information regarding establishment of farm forests <hr/> <p><u>Achievement (50 %) Activity is still ongoing.</u></p> <ul style="list-style-type: none"> ● Information on selection of targets, profile survey, design, establishment and monitoring have been recorded. ● Any other relevant information on farm forestry is being recorded through use of field information note installed at farmers' place.
<p style="text-align: center;">Activities (Progress)</p>	<ul style="list-style-type: none"> ● Information and record keeping through use of monitoring sheet and field information note.
<p style="text-align: center;">Constraints & Countermeasures</p>	<p style="text-align: center;">None</p>

Record of the 1st monitoring;

- 2. Design, establish, monitor and evaluate farm forest
- 2.2 Collect and analyze information concerning establishment of farm forest
- 2.2.1 Review of SFTP (II) extension approaches

ITEM	
<p>Extension Method and Information</p> <hr style="border-top: 1px dashed black;"/> <p>Review of SFTP II extension approaches (P.O. 2.2.1)</p>	<p><u>Plan</u></p> <p>Review the reports on extension approaches conducted during SFTP(II) and find out or learn crucial points for establishment of farm forests through experiences.</p> <p><u>Achievement</u></p> <p>- The results of reviewing all six extension approaches were compiled as a report. Achievement 100%.</p>
<p>Activities (Progress)</p>	<ol style="list-style-type: none"> 1. All six extension approaches conducted in SFTP (II) shown below were reviewed mainly by using six reports written during SFTP(1) and (II); Model farmers approach, Small scale nursery approach, Demonstration plot approach, peoples plantation approach and seedling distribution. 2. While reviewing the model farmers approach, an interview was made with a few of the previous model farmers to supplement data which the reports lacked. 3. A report of the review of Social Forestry training project phase II extension approaches was compiled as the results of the above activities. 4. The reports were circulated to members of farm forest establishment section.
<p>Constraints (Countermeasures)</p>	<p>In some cases supportive data was not included in the reports written during SFTP.</p>

Record of the 2nd monitoring 2000

- 2. Design, establish, monitor and evaluate farm forest
- 2.2 Collect and analyse information concerning establishment of farm forest
- 2.2.2 Conduct general conditions survey in target areas

ITEM	
<p>Extension Method and Information</p> <hr style="border-top: 1px dashed black;"/> <p>Conduct general conditions survey in target areas (P.O. 2.2.2)</p>	<p><u>Plan</u></p> <p>General conditions survey at division level should be conducted in five Divisions. General condition at location level should be surveyed through questionnaire.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <p>General conditions survey at division level was conducted and the first draft of the report was compiled. Data collected through questionnaire from locations is being analyzed. Achievement 80%.</p>
<p>Activities (Progress)</p>	<ol style="list-style-type: none"> 1. General conditions of five Divisions (Central, Chuluni, Kabati, Mutomo, Mutitu) had been surveyed by reviewing literatures and collecting information from DFEOs from the end of 1997 to the beginning of 1998. The first draft of a report on it was compiled. 2. Questionnaire on general conditions were handed to 33 location Chiefs in six Divisions collected around March and April in 1998. Data analysis and report writing on-going. The data has been analyzing. 3. The final draft of report implying results of the two surveys is being compiled.
<p>Constraints (Countermeasures)</p>	<ol style="list-style-type: none"> 1. Data collected through questionnaire from location Chiefs had low credibility and inappropriate to the questions. 2. Some items of general condition at Division level were very difficult to be collected due to lack of publications.

Record of the 2nd monitoring; Description of each item of the P.O.

2. Design, establish, monitor and evaluate farm forest

2.2. Collect and analyze information concerning establishment of farm forest

2.2.3. Conduct forest resource survey

ITEM	
<p>OUTPUT (farm forest establishment (technology))</p> <p><u>Conduct forest resource survey</u> (P.O. 2.2.3.)</p>	<p><u>Plan</u> 1. to make a forest resource inventory report including maps, by using of GPS, satellite photo, ground survey, etc.</p> <hr/> <p><u>Achievement</u> 1. A tentative GIS system was established and a tentative report including satellite photos was prepared. <u>Achievement:50%</u></p>
<p>ACTIVITIES (Progress)</p>	<p>1. Dr. Hirata, the short term expert, visited and surveyed the project area. He inputted a lot of geographical data, like roads, borderlines, agro-climatic zones, into a GIS(geographical information system) in the windows machine.</p>
<p>CONSTRAINTS (Countermeasures)</p>	<p>The satellite photographs brought by Dr. Hirata were not clear enough because of clouds. The clearer photograph will be brought when he visit next time.</p>

SOFEM
Record of the 1st Monitoring 1999

Description of each item of the PO :

- 2 Design, establish, monitor and evaluate farm forest
- 2.2 Collect and analyze information concerning establishment of farm forest
- 2.2.4 Conduct survey for general condition of individual farmers in target areas

Section : Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (PO 2.2.5)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> ● Conduct socio-economic and natural resource survey in 4 divisions of Kitui District, Mutomo, Kabati, Chuluni and Central.
	<p><u>Achievement (100 %)</u></p> <ul style="list-style-type: none"> ● A socio-economic and resource survey report was published.
<p style="text-align: center;">Activities (Progress)</p>	<ul style="list-style-type: none"> ● The survey was conducted using a pre-designed semi-structural questionnaire. Clustered random sampling technique was used. Each location in a division constituted one cluster. Sample homes were then selected randomly from each location. ● The survey was conducted by Japanese experts and Kenyan counterparts from both KEFRI and FD.
<p style="text-align: center;">Constraints & Countermeasures</p>	<p>Inaccessibility to target areas due to poor road condition.</p>

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.3 Formulate strategic plan for promoting farm forest establishment by local residents
- 2.3.1 Set up guideline for farm forestry establishment

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.3.1)	<u>Plan</u> Formulate a guideline for farm forest establishment to be used by extension agents.
	<u>Achievement (80%) Activity still on-going</u> Editing of second edition on-going
Activities (Progress)	Drafting of second edition to describe possible options for establishing farm forests by extension agents.
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.3 Formulate strategic plan for promoting farm forest establishment by local residents
- 2.3.2 Identify appropriate approaches for target farmer selection

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.3.2)	<u>Plan</u> To identify appropriate SOFEM extension approaches for selection of target farmers.
	<u>Achievement (100%)</u> Identified three approaches viz. <ul style="list-style-type: none"> ◆ Group approach ◆ Village approach ◆ Individual approach
Activities (Progress)	<ul style="list-style-type: none"> ▪ Relevant Information collection ▪ Joint meeting FD/KEFRI/JICA
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.3 Formulate strategic plan for promoting farm forest establishment by local residents
- 2.3.3 Select target areas

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.3.3)	<u>Plan</u> Identify project target areas.
	<u>Achievement (100%)</u> Three (3) divisions, i.e. Central, Kabati and Chuluni within Kitui District were identified as the project target areas.
Activities (Progress)	<ul style="list-style-type: none"> ◆ Analysis of the date on socio-economic and natural conditions in Kitui District. ◆ Joint meeting FD/KEFRI/JICA
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.3 Formulate strategic plan for promoting farm forest establishment by local residents
- 2.3.4 Conduct and monitor seed/seedling information system

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.3.4)	<p><u>Plan</u> Develop a seed/seedling information system.</p>
	<p><u>Achievement (50%)</u> <ul style="list-style-type: none"> ◆ First issue of seed/seedling information was produced and distributed to all public places within the project target area. </p>
Activities (Progress)	<ul style="list-style-type: none"> ◆ Development of data collection sheet ◆ Compilation of data collected ◆ Production of first issue
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.3 Formulate strategic plan for promoting farm forest establishment by local residents
- 2.3.5 Conduct and monitor cost sharing information

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.3.5)	<u>Plan</u> Make sure potting materials (polythene tubes/ bags) are available locally in order to promote farm forestry by local residents.
	<u>Achievement (50 %)</u> Groups, individuals and institutions participated in cost sharing.
Activities (Progress)	<ul style="list-style-type: none"> ▪ Preparation of the guideline ▪ Advertisement to the local communities ▪ Collection of orders from farmers ▪ Inspection of the appropriateness of the beneficiaries ▪ Delivery of cost-shared items to the farmers
Constraint & Countermeasures	Difficulty in prioritizing the potential beneficiaries within the limited budget

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.4 Establish farm forests
- 2.4.1 Train extension agents

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.4.1)	<u>Plan</u> To equip technical assistants with the necessary technical knowledge for establishing farm forests.
	<u>Achievement (50 %)</u> <ul style="list-style-type: none"> ◆ Two weeks course was organized and thirteen participants from the project and FD attended. ◆ Three days OJT was organized for project headforemen and target farmers.
Activities (Progress)	<ul style="list-style-type: none"> ◆ Preparation of course program and training materials. ◆ One-week course was conducted. ◆ All TAS participated in the actual tree planting exercise, gave technical advises and demonstrated to the farmers as part of OJT program.
Constraint & Countermeasures	Difficulty in preparing training materials since farm forestry is a new concept

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.4 Establish farm forests
- 2.4.2 Select target farmers

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.4.2)	<p><u>Plan</u></p> <p>To select target farmers from the project target areas.</p>
	<p>Achievement (30%)</p> <p>A total of thirty one farmers were selected for farm forestry establishment. Ten farmers were selected from both chuluni and central and eleven from kabati division for farm forestry establishment</p>
Activities (Progress)	<p>This included:</p> <ul style="list-style-type: none"> ◆ Nomination of farmers using the three approaches of <i>Village, individual, and group.</i> ◆ Profile survey using a prepared questionnaire ◆ Selection of farmers using a set of criteria such as accessibility, willingness, interest, and openness.
Constraint & Countermeasures	<p>None</p>

SOFEM
Record of the 2nd Monitoring 2000

- Description of each item of the P/O**
 2 Design, establish, monitor and evaluate farm forest
 2.4 Establish farm forests
 2.4.3 Train target farmers

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.4.3)	<u>Plan</u> To conduct training course for target farmers.
	<u>Achievement</u> (30%) A total of 46-target farmers were trained through the training course and study tour to similar projects.
Activities (Progress)	<ul style="list-style-type: none"> ◆ Preparation of course program and training materials ◆ Conduct training course ◆ Conduct study tour to similar projects.
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.4 Establish farm forests
- 2.4.4 Conduct profile survey on selected target farmers

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.4.4)	<p><u>Plan</u> To collect detailed information from selected farmers to understand farmers' status quo and capture their needs.</p>
	<p><u>Achievement</u> (30%) Profile survey was conducted on the thirty-one farmers and relevant information in relation to farm forestry collected and compiled.</p>
Activities (Progress)	<ul style="list-style-type: none"> ◆ Interview farmers using an already prepared questionnaire. ◆ Sketch mapping of the farmers land
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.4 Establish farm forests
- 2.4.5 Design target farm forests

Section: Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (P/O 2.4.5)</p>	<p><u>Plan</u> Design farm forests on the thirty-seven target farmers.</p> <hr/> <p><u>Achievement</u> (30%) Design farm forests on thirty-seven farmers and compile as scheduled. The tree planting practices designed included;</p> <ul style="list-style-type: none"> ◆ Woodlots ◆ Fruit orchards ◆ Live fence ◆ Borderline ◆ Windbreaks
<p style="text-align: center;">Activities (Progress)</p>	<p>This included:</p> <ul style="list-style-type: none"> ◆ Site selection ◆ Species selection ◆ Measurement of planting sites and design layout of the trees planted ◆ Staking <p>All activities were done in collaboration with farmers.</p>
<p style="text-align: center;">Constraint & Countermeasures</p>	<p>None</p>

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.4 Establish farm forests
- 2.4.6 Establish farm forests

Section: Farm Forest Establishment (Extension)

<p>OUTPUT (P/O 2.4.6)</p>	<p><u>Plan</u> To establish farm forests based on the designs made in collaboration with farmers.</p> <hr/> <p><u>Achievement</u> (30%)</p> <ul style="list-style-type: none"> ◆ All the thirty-one newly selected farms were established and the six (6) established farms extended ◆ A total of 2,372 different species were planted most of them under costing sharing system.
<p>Activities (Progress)</p>	<ul style="list-style-type: none"> ◆ Procurement of improved fruit seedlings and other forest trees and distribution. ◆ Provision of technical advises on all processes concerning farm forestry such as site preparation, pitting, soil mixing and refilling, construction of water catchment and watering techniques.
<p>Constraint & Countermeasures</p>	<p>None</p>

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.4 Establish farm forests
- 2.4.7 Monitor the establishment of farm forest

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.4.7)	<u>Plan</u> To monitor the progress of established farm forests.
	<u>Achievement</u> (30%) Project TAS, FD TAS and DFEO continue monitoring exercise using an already prepared monitoring sheet.
Activities (Progress)	<ul style="list-style-type: none"> ◆ Weekly monitoring of general health of surviving seedlings. ◆ Conduct quarterly assessment on established farm forests. <ul style="list-style-type: none"> -Parameters monitored include -Survival rates -height -girth diameter -mortality reasons
Constraint & Countermeasures	Insufficient human resources and mobility of grass-root extension agent

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.4 Establish farm forests
- 2.4.8 Record keeping

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.4.8)	<p><u>Plan</u> Keep record of all information regarding the process and progress of farm forest establishment</p>
	<p><u>Achievement (30%)</u> Activity still ongoing Accumulated information related to farm forestry activities has been recorded.</p>
Activities (Progress)	<p>Information collection and recording through use of farmers visitors/record books and monitoring sheets.</p>
Constraint & Countermeasures	<p>Inconsistency in recording by grass-root extension agents</p>

SOFEM
Record of the 2nd Monitoring 2000

- Description of each item of the P/O**
 2 Design, establish, monitor and evaluate farm forest
 2.5 Establish farmer to farmer extension
 2.5.1 Prepare programme for farmer to farmer extension

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.5.1)	<u>Plan</u> To transfer necessary tree planting techniques to the communities surrounding target farmers through farmer to farmer extension system
	<u>Achievement</u> (100%) Concept paper produced.
Activities (Progress)	<ul style="list-style-type: none"> ◆ Drafting of concept paper. ◆ Preparation of training programme.
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.5 Establish farmer to farmer extension
- 2.5.2 Conduct and monitor farmer to farmer extension programme

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.5.2)	<u>Plan</u> To transfer necessary tree planting techniques to the communities surrounding target farmers through farmer to farmer extension system
	<u>Achievement (0%)</u> Activity has not yet been commenced.
Activities (Progress)	
Constraint & Countermeasures	

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.6 Improve demonstration plots in Tiva (DEMO II)
- 2.6.1 Develop and demonstrate practical farm forestry related technologies.

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.6.1)	<p><u>Plan</u></p> <p>Develop and demonstrate practical farm forestry related technologies.</p> <hr/> <p><u>Achievement (50 %)</u></p> <p>Eleven (11) appropriate farm forestry related technologies were initiated as below.</p> <ul style="list-style-type: none"> ▪ Establishment of small-scale multipurpose trees/fruit/flower and vegetable nurseries ▪ Multipurpose tree planting and management ▪ Implementation of various agroforestry techniques ▪ Demonstration of various soil improvement techniques ▪ Establishment of an exotic /local fruit orchard ▪ Establishment of a domestic backyard food production garden ▪ Practicing of various efficient water use methods ▪ Construction of a family health enhancing kitchen unit, store and display wing ▪ Improved small holder farm tools ▪ Setting up of an improved traditional livestock pen ▪ Construction of a small holder seasonal fish pond ▪ Development of locally based pest control methods ▪ Installation of an improved and local bee hives ▪ Introduction of dry land bamboo species including its uses
Activities (Progress)	<ul style="list-style-type: none"> ▪ Collection of relevant technologies from documents, visitors and visits ▪ Screening them through implementation meetings ▪ Designing ▪ Implementation ▪ Improving where necessary ▪ Publishing
Constraint & Countermeasures	<p>Constraint</p> <ul style="list-style-type: none"> ▪ Limited operational space ▪ Animal and insect damages <p>Countermeasures</p> <ul style="list-style-type: none"> ▪ Physical guarding. ▪ Screening of various environmentally safe pesticides ▪ Use of cultural control methods

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2 Design, establish, monitor and evaluate farm forest
- 2.6 Improve demonstration plots in Tiva (DEMO II)
- 2.6.2 Conduct and monitor OJT programme..

Section: Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (P/O 2.6.2)</p>	<p><u>Plan</u></p> <p>Formulate, develop and implement the on-job-training (OJT) programme.</p>
	<p><u>Achievement</u> (20 %)</p> <p>Formulation, development and implementation of the on-job-training programme was initiated as below:</p> <ul style="list-style-type: none"> ▪ Implementation of a number of practically oriented farmer's courses. ▪ Implementation of a number of practically oriented grass-root technical assistant's courses. ▪ Hosting of various externally facilitated farmer's practical courses. ▪ Hosting of an institutional farm forestry practical course. ▪ Conduction of a joint TA/Farmer rapid technology transfer practical course.
<p style="text-align: center;">Activities (Progress)</p>	<ul style="list-style-type: none"> ▪ Technology transfer problem identification. ▪ Development, advertisement of training venues. ▪ Identification of target trainees. ▪ Conduction of theoretical and practical on-station training. ▪ Conduction of farm condition training. ▪ Evaluation of training impact. ▪ Conduction of follow-up surveys. ▪ Development of suitable extension tools to enhance rapid technology transfer to grass-root level, e.g. cost sharing system.
<p style="text-align: center;">Constraint & Countermeasures</p>	<p>Constraints</p> <ul style="list-style-type: none"> ▪ Insufficient information on the existence of Tiva DEMO II facility <p>Countermeasures</p> <ul style="list-style-type: none"> ▪ Effective advertisement.

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

2 Design, establish, monitor and evaluate farm forest

2.7 Feedback of technical knowledge of planting and tending trees into the Tec. Dep. Section

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.7)	<p><u>Plan</u> Feedback technical knowledge of planting and tending trees into the technology development section.</p>
	<p><u>Achievement</u> (20%) <u>Continuous activity throughout the project period</u> Information feedback is done through regular joint meeting between extension section and technology development section.</p>
Activities (Progress)	<ul style="list-style-type: none"> ◆ Monthly regular meeting between extension section and technology development section ◆ Regular monitoring and recording of the conditions of the seedlings. ◆ Conduct quarterly assessment on established farm forests. <ul style="list-style-type: none"> -Parameters monitored include -Survival rates -height -girth diameter -mortality reasons
Constraint & Countermeasures	<p>None</p>

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2. Design, establish, monitor and evaluate farm forest
- 2.8 Intermediate evaluation

Section: Farm Forest Establishment (Extension)

OUTPUT (P/O 2.8)	<p><u>Plan</u> Evaluate the project activities and outputs and revise if necessary.</p>
	<p><u>Achievement (80%) To be completed during mid-term evaluation mission</u> Activities and outputs were reviewed and proposed change was made.</p>
Activities (Progress)	<ul style="list-style-type: none"> ▪ Review of activities and outputs ▪ Prepare the proposed change
Constraint & Countermeasures	None

SOFEM
Record of the 2nd Monitoring 2000

Description of each item of the P/O

- 2. Design, establish, monitor and evaluate farm forest
- 2.9 Review of plan of farm forest establishment

Section: Farm Forest Establishment (Extension)

<p style="text-align: center;">OUTPUT (P/O 2.9)</p>	<p><u>Plan</u> Review project activities and outputs.</p>
	<p><u>Achievement</u> (100%) <u>To be endorsed during mid-term evaluation mission</u> Activities and outputs were reviewed.</p>
<p style="text-align: center;">Activities (Progress)</p>	<ul style="list-style-type: none"> ▪ Review of activities and outputs ▪ Prepare the proposed change
<p style="text-align: center;">Constraint & Countermeasures</p>	<p style="text-align: center;">None</p>

RECORD OF MONITORING; DESCRIPTION OF EACH ITEM OF THE P.O.

- 3. Collect, Synthesize and Disseminate Information on Social Forestry Extension
- 3.1 Make Preparations for Information Activities
- 3.1.1 Clarify Information Flow on Social Forestry Extension

ITEM	
OUTPUT	PLAN
Extension Method and Information	<p>To clarify internal and external information flow of FD, KEFRI and concerned institutions to collect and disseminate information on social forestry smoothly.</p>
Clarify Information flow on Social Forestry Extension. (P.O. 3.1.1)	<p>Achievements</p> <ol style="list-style-type: none"> 1. Document has been published and distributed to other sections in the project. 2. The document shows the flow of information between KEFRI, FD, SOFEM/JICA, and other stakeholders. <p>Achievement: 100%</p>
ACTIVITIES (Progress)	<p>The follow-up below is needed:</p> <ol style="list-style-type: none"> 1 Compiling additional information for second edition. 2 Monitoring changes in forestry legislation
Constraints (Counter measures)	<ol style="list-style-type: none"> 1 Quantitative data was largely lacking 2 Existence of KEFRI and FD in separate ministries made drawing of document difficult
Counter measures	<ol style="list-style-type: none"> 1 Document was drawn up with the option of revising later.

- 3. Collect, synthesize and disseminate information on social forestry extension
- 3.1 Make preparations for information activities
- 3.1.2 Preparation of guideline for information activities

ITEM	
<p>(Extension Method and Information)</p> <p>Preparation of guideline for information activities (P.O. 3.1.2)</p>	<p>Plan</p> <p><u>To prepare guidelines for information activities to organize and coordinate proper collection, storage and dissemination of information on SOFEM activities.</u></p> <hr style="border-top: 1px dashed black;"/> <p>Achievement</p> <p>The draft of guidelines has been prepared and is being checked for finalizing.</p> <p>Achievement: 70%</p>
<p>Activities (Progress)</p>	<p>A draft was prepared and circulated to members for comments. Final draft is under preparation by checking with the on-going document management system.</p>
<p>Constraints (Countermeasures)</p>	<p>No major constraints.</p>

3. Collect, synthesize and disseminate information on social forestry extension

3.2 Hold regular meetings.

ITEM	
<p>(Extension Method and Information.</p> <p>Holding regular meetings</p> <p>O. 3.2)</p>	<p><u>Plan</u></p> <p>Hold monthly meetings on SOFEM, information and extension activities.</p> <p>.....</p> <p><u>Achievements</u></p> <p>The meetings have been held as scheduled except for December and January when most members were on annual leave.</p> <p>Achievement 35%</p>
<p>Activities</p> <p>(Progress)</p>	<ol style="list-style-type: none"> 1. Meetings have been held monthly at KEFRI Headquarters and FD Headquarters. 2. All the minutes of the past meetings have been prepare.
<p>Constraints</p> <p>(Countermeasures)</p>	<ol style="list-style-type: none"> 1. It is not easy to arrange transportation for some members. 2. Poor communication equipment makes preparation of the meeting difficult.

- 3. Collect, synthesize and disseminate information on social forestry extension
- 3.3 Collect and analyze information from outside sources
- 3.3.1 Collect and analyze publications

ITEM	
<p>(Extension Method and Information)</p> Collect and analyze publications (P.O. 3.3.1)	<p><u>Plan</u></p> <p>The project will acquire a relevant collection of publications and set out a criteria for creating abstracts for ease of reference.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ol style="list-style-type: none"> 1. Project continues to purchase and collect publications 2. Books purchased last year have arrived already. 3. Other publications have been received through information exchange. 4. Some abstracts have been made for use in Kitui Library. <p>Achievements: 20%</p>
<p>Activities (Progress)</p>	<ol style="list-style-type: none"> 1. A catalogue system of library is now in use in Kitui. 2. Abstracts are being made from books bought in 1998.
<p>Constraints (Countermeasures)</p>	<ol style="list-style-type: none"> 1. Abstracting was first slow but will pick up. 2. Kitui Librarian was trained in abstract making. 3. It is decided to involve information section as a whole to participate in abstract making.

3.3.2 Exchange information with concerned institutions

ITEM	
<p>(Extension Method and Information)</p> <p>Exchange information with concerned institutions (P.O. 3.3.2)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> * To exchange information with concerned institutions in Social Forestry through visiting or attending seminars. * To feedback useful information gathered through information exchange to the project activities. <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ul style="list-style-type: none"> * The section staff visited two Projects in Rift valley and Western Province and final report has been prepared and distributed. <p><u>Achievement 25%</u></p>
<p>Activities (Progress)</p>	<ul style="list-style-type: none"> * The preparations for a visit to GTZ Embu are underway.
<p>Constraints (Countermeasures)</p>	<p>None</p>

3. Collect, synthesize and disseminate information on social forestry extension

3.3.3 Collect and analyse successful cases of established farm forests

ITEM	
<p>(Extension Method and Information)</p> <p>Collect and analyse successful cases of farm forestry. (P.O. 3.3.3)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> - To visit successful cases of farm forestry and share experiences. - Compile reports on such visits and give feedback to SOFEM. - Two visits per year planned. <p>.....</p> <p><u>Achievement</u></p> <ul style="list-style-type: none"> - Visit made to Kajiado in March 1999 and report compiled. - Planning for a visit to Embu is in progress. <p>Achievement 15%</p>
<p>Activities (Progress)</p>	<ol style="list-style-type: none"> 1. There was a visit to Kajiado and report compiled. 2. Plans to visit Meru are at an advanced stage. 3. Arrangements to visit two sites per year is in progress.
<p>Constraints (Countermeasures)</p>	<p>Some of the activities of the sites visited were not highly valuable. More information need to be collected before visiting.</p>

- 3 Collect, synthesize and disseminate information on social forestry
- 3.4 Collect information accumulated through project activities
- 3.4.1 Keep record of project activities

ITEM	
<p>(Extension Method and Information)</p> <p>Keep record of project activities (P.O. 3.4.1)</p>	<p><u>Plan</u></p> <p>Preparation of a system of how to manage records kept on SOFEM activities and compiling the project records into annual reports.</p> <p><u>Achievement</u></p> <p>*The KEFRI format of annual reports was adopted with only a few amendments and a SOFEM annual report for 1998 was prepared using this format.</p> <p>* A format for writing quarterly reports by each section was also developed. Quarterly reports for 1999 were prepared and these reports are being used to compile the 1999 SOFEM annual report.</p> <p><u>Achievement: 35%</u></p>
<p>Activities (Progress)</p>	<p>* Quarterly reports for 1999 have been circulated to other sections for correction.</p>
<p>Constraints (Countermeasures)</p>	<p>*The format developed in 1998 for recording project activities was not put into use due to the project staff having too much work to fill the formats hence the production of SOFEM annual report for 1998 delayed.</p> <p>*Developing a format that is applicable to all sections of the project is difficult.</p> <p>* The system of managing project records has not yet been developed due to lack of knowledge.</p>

- 3 Collect, synthesize and disseminate information on social forestry
- 3.4 Collect information accumulated through project activities
- 3.4.2 Collect information from farmers or extension agents

ITEM	
<p>(Extension Method and Information)</p> <p>Collect information from farmers or extension agents (3.4.2)</p>	<p><u>Plan</u></p> <p>To collect and compile useful information on Social Forestry acquired by farmers or extension agents.</p> <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ul style="list-style-type: none"> *The twenty four sheets collected previously were compiled into a 2 page report. * The information collection sheet was reviewed and ammended. *During a T.A's and farmers' training course the importance of this activity and how to fill the information sheets was explained. <p><u>Achievement 20%</u></p>
<p>Activities (Progress)</p>	<ul style="list-style-type: none"> * The format developed previously was amended. * DFEO's, Extension agents and farmers were instructed further on how to use the format. * Some farmers were visited and information collected. * 45 information sheets were filled. * Printing and compilation of the information is in progress.
<p>Constraints (Countermeasures)</p>	<ul style="list-style-type: none"> * All the farmers contacted are giving information on medicinal utilization of trees. * Getting the botanical names of the tree species and shrubs mentioned by farmers is difficult.

3. Collect, synthesize and disseminate information on social forestry extension

3.5 Develop extension materials on establishment of farm forest for extension agents

<p>ITEM</p>	
<p>(Extension Method and Information.</p> <p>Develop extension material on establishment of farm forest for extension agents. (P.O. 3.5)</p>	<p><u>Plan</u></p> <p>To develop extension materials using SFTP II and SOFEM experiences for use by extension agents.</p> <p>.....</p> <p><u>Achievement</u></p> <p>Some brochures, leaflets, manuals e.t.c. have been produced Achievement 35%</p>
<p>Activities (Progress)</p>	<p>Though this activity is scheduled for the year 2000 – 2001, based on the necessity of making some materials for extension works, brochures and leaflets e.t.c. have been produced.</p> <p>Examples of materials made are brochures of Enzaro – jiko, leaflets of water purification, picture story and a video of tree planting techniques.</p>
<p>Constraints (Countermeasures)</p>	<p>No major constraints.</p>

RECORD OF THE SECOND MONITORING: DESCRIPTION OF EACH ITEM OF THE P.O.

- 3. Collect, synthesize and disseminate information on social forestry extension
- 3.6 Disseminate information through publications or events
- 3.6.1 Publish project newsletter

ITEM	
<p style="text-align: center;">OUTPUT</p> <p>(Extension Method and Information)</p> <p>Publish project newsletter (P.O. 3.6.1)</p>	<p>Plan</p> <p>The Project will publish a newsletter with a circulation covering major areas of the project activities involving District Forest Officers, KEFRI Scientists, Government Ministry libraries, Research Institutes, Universities, Donors, Press, Industries, UN Agencies in Kenya and Non Governmental Organization dealing with forestry.</p> <hr/> <p>Achievement</p> <p>1. Published second issue of 2,000 copies</p> <p>Achievement: 15%</p>
<p style="text-align: center;">Activities (Progress)</p>	<ol style="list-style-type: none"> 1. Preparing to circulate newsletter to 1452 organizations 2. Preparing to publish third edition of newsletter preparing to review guidelines for the next issue of newsletter
<p style="text-align: center;">Constraints (Counter measures)</p> <p style="text-align: center;">Counter measures</p>	<ol style="list-style-type: none"> 1. Keying work into computer was slow; only hard copies of the newsletter articles were provided <ol style="list-style-type: none"> 1. Muguga centre has acquired a modern computer, making editing work go faster 2. A scanner has also been acquired enabling picture and sketch processing easier

RECORD OF THE SECOND MONITORING: DESCRIPTION OF EACH ITEM OF THE P.O.

- 3. Collect, synthesize and disseminate information on social forestry extension
- 3.6 Disseminate information through publications or events
- 3.6.2 Disseminate information through other media

ITEM	
<p>(Extension Method and Information)</p> <p>Disseminate information through other media (P.O. 3.6.2)</p>	<p>Plan Send information for publication through mass media and journals</p> <hr style="border-top: 1px dotted black;"/> <p>Achievement 1. A video of Miti ni Mali is being dubbed for checking at KBC. TV. Achievement 10%</p>
<p>Activities (Progress)</p>	<p>1. Contacts are being made with KBC Radio. JICA Kenya office is assisting to sponsor programme production on KBC.</p> <p>2. Media was identified - Radio and Newspaper</p>
<p>Constraints (Counter measures)</p> <p>Countermeasures</p>	<p>Due to limited finances, use of media will also be limited</p> <p>It is planned to interest KBC TV to carry out periodic programme recordings</p>

3 Collect, synthesize and disseminate information on social forestry extension

3.6 Disseminate information through publications or events

3.6.3 Hold seminar on social forestry

ITEM	
<p>(Extension Method and Information)</p> <p>Hold seminar on social forestry (P.O.3.6.3)</p>	<p><u>PLAN</u></p> <ul style="list-style-type: none"> - To hold Social Forestry Seminars twice during the project life (1999 – 2002) - To publicize SOFEM activities to share experiences and knowledge with other institutions. <p>.....</p> <p><u>Achievement</u></p> <p>One of the proposed seminars was held in September, 1999</p> <p>Achievement 45%</p>
<p>Activities (Progress)</p>	<ol style="list-style-type: none"> 1. Preparation for seminar completed. 2. Seminar successfully conducted in September, 1999. 3. Proceedings compiled by Editorial Committee and dispatch of proceedings in progress. Copies distributed to members of PIC.
<p>Constraints (Countermeasures)</p>	<p>The seminar went on smoothly with no major constraints.</p>

3.6.4 Implement mobile show

ITEM	
<p>(Extension Method and Information)</p> <p>Implement mobile show (P.O. 3.6.4)</p>	<p><u>Plan</u></p> <ul style="list-style-type: none"> * Preparation of video show materials by checking those developed previously and considering their relevance. * Testing video equipment condition and show programme. * Selecting of target area and venue with the involvement of TA's. * Advertising the video show by communicating to the Chief and using posters. <hr style="border-top: 1px dashed black;"/> <p><u>Achievement</u></p> <ul style="list-style-type: none"> * The section implemented 9 mobile shows, 3 in each division i.e. Central, Kabati and Chuluni. * The data collected during the show has been entered into the computer. <p><u>Achievement: 20%</u></p>
<p>Activities (Progress)</p>	<ul style="list-style-type: none"> * Introductory remarks by the organizers. * Distribution of the evaluation forms. * A short speech and official opening of the mobile show. * Mobile show sessions <ul style="list-style-type: none"> - Agroforestry - fuelwood by the organisers - Story picture - Miti ni Mali - Tree planting activities - Water purification (purifier) - Evaluation, questions and answer session - Collection of evaluation forms for compilation.
<p>Constraints (Countermeasures)</p>	<p>None</p>