CANADIAN INTERNATIONAL DEVELOPMENT AGENCY
(CIDA)

INTERNATIONAL DEVELOPMENT RESEARCH CENTRE
(IDRC)

INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT
(IFAD)

ALLEY FARMING NETWORK FOR TROPICAL AFRICA (AFNETA)

THIRD YEAR EVALUATION REPORT

APPENDICES

VOLUME II

INTERNATIONAL INSTITUTE OF
TROPICAL AGRICULTURE (IITA)
Ibadan, Nigeria

August 20th, 1992

APPENDIX (1)

2.1 The AFNETA Goals and Targets

The goals and targets set up for AFNETA, at its inception, are described in the "AFNETA GOALS AND TARGETS" (appendix 2). These goals and targets were drawn up to guide the network in its operation and also to provide a basis for the periodic evaluation of the network. The central goal of AFNETA is "to make a positive contribution towards the development of sustainable agricultural systems, based on alley farming and general agroforestry principles for sub-Saharan Africa". The ultimate clientele therefore, is the smallholder farmer and his farm family, who produce the bulk of the food consumed in tropical Africa.

2.2 Objectives

The overall objective of the AFNETA project is to explore the relevance and applicability of alley farming (AF) concept as a basis for sustainable farming systems, and assess its adaptability and adoptability by farmers in tropical Africa. This objective is to be met through a research and development approach involving both on-station and on-farm components.

The specific objectives of the network are:

(i) To assist NARS in the development of their alley farming research programs,

(ii)To assist in the.training of NARS scientists, so as to raise their capability and expertise.in conducting alley farming research.

(iii) To coordinate R and D efforts among the NARS through information exchange mechanisms, and to create collaborative linkages with IARCs and other relevant agencies.

(iv) To assist, where possible, with the acquisition of funds for implementing alley farming R and D in the NARS.

The specific objectives for the AFNETA research activities include the following

(a) On-Station Research

(i) To conduct site adaptability studies and identification of tree species for different physical environments including acid soils and tropical highlands; (ii) To test the germplasm of suitable hedgerow tree species for specific livestock feeding purposes, including the analysis of feed quality in order to optimize their contribution in combined crop and livestock

systems; (iii) To evaluate the performance of a wide range of food crops and their cultivars as intercrops in alley farming; (iv) To investigate basic soil, plant and water relationships in alley farming, including investigations on nutrient cycling and maximization of N contribution from prunings and better assessment of soil biological activities;

(b) On-Farm Research

To test the practicability, economic viability and adoptability of alley farming in the environment of the African farmer.

2.3 General Statement on Achievements so far

What has the network achieved? Every network has two distinct aspects in its activities and operation. These are (i) central (or coordination) activities and (ii) ground (or membership) activity. The former refers to the activities of the network's coordination unit, involving mainly its center-organized functions and coordination activities. The latter refers to the individual activities and responsibilities of member institutions and individuals. In the case of AFNETA, this consists primarily, of the research activities of individual member institutions. To be able to have a successful network, it is required that both components of its activity structure should be active and operate effectively. The issue of what AFNETA has achieved, therefore, will be examined from these two perspectives.

2.3.1. Center-organized activities

There is no doubt that AFNETA has grown into a virile and active network. AFNETA is now a household name in research and development institutions in Africa, and is among the most active networks in Africa today.

Development of Institutional Linkages

Key factors that have contributed to AFNETA's satisfactory growth and development are the involvement and support of multiple institutions in the project. Institutional linkages exist at 5 main levels in AFNETA.

(i) *Donor institutions*

Donor support is indispensable, especially because of the novelty of the alley farming system to most NARS, and also because of its special requirement for coordination and backstopping, for which no individual country could be made to provide the resources.

To-date, AFNETA has enjoyed a generally favorable donor climate, though more assistance is required. There are three major donor agencies currently providing financial support to the network. The central coordination and administration activities of the network are funded, principally, through a joint grant of the Canadian International Development Agency (CIDA) and International Development Research Centre (IDRC) for the period 1989-1993. The International Fund for Agricultural Development (IFAD) is, through a special technical assistance grant, providing funds to support research activities of NARS institutions involved in network collaborative trials.

Other donor agencies that have also provided some support to AFNETA-linked programs are the Danish International Development Agency (DANIDA) and the United States Agency for International Development, (USAID). DANIDA provided some funds to assist the network's take-off activities, while USAID is supporting a number of research projects being carried out in collaboration with some universities in the United States.

The Ford Foundation and the Austrian Agency for International Cooperation are currently considering support for the second batch of NARS collaborative research projects. The Ford Foundation also sponsored a number of NARS social scientists involved in AFNETA projects to the 1992 AFNETA Annual Membership Meeting.

(ii) *IARCs*

AFNETA is affiliated to three International Agricultural Research Centers - IITA, ILCA and ICRAF. Little could have been achieved without the support and backing of these three centres. Backstopping activities are provided in training, research and information exchange. IITA additionally has provided administration support and a "home" for the network.

(iii) *NARS*

The involvement and contribution of NARS institutions has also been remarkable. Interest of NARS in AFNETA membership is so high that it has outstripped present coordination capacity. To-date, there are about fifty African national institutions from some 25 countries that are registered members of this network. Over 60 percent of these institutions

have on-going funded collaborative research projects, while funds are being sought for the remaining institutions.

(iv) *External Institutions*

AFNETA also collaborates with some research institutions and universities outside Africa, in areas of research of relevance to alley farming, through funding provided by the USAID. Such external collaboration, though indirect, is very important for providing basic research information support for the network.

(v) *Other Networks and Organizations*

Collaboration has been the watchword and AFNETA has close collaborative links with three other networks operating in Africa. These are Agroforestry Research Networks for Africa (AFRENA), Animal Feed Resources Research Network (AFRNET), and the West African Farming Systems Research Network (WAFSRN). There are also indirect links with the Small Ruminant Research Network of ILCA.

These linkages have been at the level of general information exchange. We would like to see this gesture of collaboration strengthened from all sides. We would like to see existing networks work together even more and share experiences in the planning and execution of their various research agendas.

Other organizations with which AFNETA collaborates include WINROCK International and the International Atomic Energy Agency (IAEA). We are currently establishing firm links with the Information Centre for Low External Input and Sustainable Agriculture (LEISA), and the International Institute for Environment and Development (IIED). We shall therefore continue to explore ways of strengthening our links with all these institutions, for the benefit of all partners.

Information Exchange and Training Activities

The network has enjoyed a lot of positive publicity through its information exchange and training programs. The network documents have played a major role in raising awareness of the activities of the network among NARS and other institutions.

In training, the train-the trainer model adopted and effected by the network has played a big role in raising capabilities of national scientists and technicians in the conduct of alley

farming research. Training centers have been established in four zones and regional courses are organized in collaboration with national institutions. Since its inception in 1989 over 200 NARS personnel have received alley farming training, through AFNETA training courses.

2.3.2 Ground (Membership) Activity

The implementation of the research program is the principal membership activity of the network. If there is nothing to show at ground level, in terms of successful research projects and strong linkages with development and extension agencies for the transfer of the results of research to farmers, there will be no achievement at all.

It is clearly too early to show what conclusive gains have been made, especially on the issues of adoptability and transfer of the technology to farmers. The network is handling a very difficult task, and working with partners, some of whom had no previous experience in alley farming prior to establishment of AFNETA. We ask for patience, understanding and continued support, especially from our donors, to ensure that this work progresses satisfactorily towards achieving the set objectives.

However, a lot of ground has been covered and satisfactory progress made. At the general level, it can be said that the network has succeeded in:

- raising awareness on potentials of (AF) in national research and development institutions,
- raising NARS capability in (AF) research and training programs.
- raising the level and quality of NARS research on AF and related systems .
- raising the number of NARS institutions involved in AF research within farming systems perspective.
- establishing a mechanism for strengthening inter-institution collaboration in research development among NARS.

The number of NARS institutions currently involved in systematic research programs has increased since the last AF conference, 1986, which led to the conception of AFNETA. A glance through the proceedings of this conference (Kang and Reynolds, 1989) will show that most of the papers were from IARC institutions and other external organizations. Only 8 of the technical presentations, were from African NARS institutions, and most of these reported on very preliminary work and plans.

Today, through AFNETA, there are 35 NARS institutions from some 20 countries with systematic and well-integrated AF research programs. There is already a second batch of 25 institutions whose research proposals have been accepted, and for which funding is

currently being sought.. By 1993 the number of institutions with functioning AF research programs is likely to exceed 45, with over 200 NARS scientists of different disciplines fully involved in inter-disciplinary AF research.

General status of research implementation

This section gives a general and subjective assessment of the overall performance of the research projects across the various institutions. It essentially tries to make a distinction between projects which are running satisfactorily, and those which have problems and difficulties likely to affect their potential to contribute to scientific knowledge and/or farmer adoption of AF. The assessment is based on reports of the various monitoring missions to projects, and on the reports presented by project personnel during annual meetings. In this analysis all projects were scored individually, (scale: 1= poor; 2= below average; 3= average/good; 4= above average/v. good).

Fig. 1* Scoring of various AFNETA/NARS collaborative research projects along a performance scale.

			(32.4%)	(29.7%)
			X	
		(27.0%)	X	X
		X	X	X
		X	X	X
		X	X	X
Frequency		X	X	X
(No. of Projects.)	(10.8%)	X	X	X
	X	X	X	X
	X	X	X	X
	X	X	X	X
	X	X	X	X

1	2	3	4
Poor	Fair	Good	V. good

Performance scale

Every effort will be made to ensure that the distribution of performance gets skewed more towards the right. Projects which are not functioning appropriately will be recommended for discontinuation.

APPENDIX (2)

AXES ET PRINCIPALES QUESTIONS D'ÉVALUATION

1.0 FONDEMENTS THÉORIQUES ET CONCEPTION DU PROJET

1.1 Antécédents et contexte

Le projet (fondements théoriques, conception et arrangements institutionnels) constituait-il une réponse appropriée à la situation qui existait quand il a été approuvé?

- Comment s'inscrit-il dans les plans nationaux sectoriels et sous-sectoriels auxquels il se rattache?
- Examen critique du <u>contexte</u> dans lequel le projet a été formulé. <u>Contexte</u> désigne ici tant les variables macro-économiques/micro-économiques que les facteurs culturels et sociaux touchant l'environnement.
- Examen critique du <u>cadre</u> dans lequel le projet a été formulé. <u>Cadre</u> s'entend ici tant de l'environnement institutionnel du projet que des relations entre les institutions auxquelles il est associé et d'autres institutions concernées par le projet.
- Quels sont les événements importants intervenus ultérieurement dans lesdits contexte et cadre qui ont affecté le projet?
- Quelles sont les assistances importantes de sources autres que l'ACDI relatives à l'objet du projet, leurs fondements, leurs articulations/cohérences?

1.2 Descriptif du projet

<u>Le problème à résoudre</u>

- Le problème que le projet était censé résoudre était-il identifié et énoncé clairement?

Approche technique et organisationnelle

- L'approche technique (solution au problème) que le projet était censé utiliser était-elle clairement indiquée, adéquate à la problématique visée, justifiée?
- Était-ce à priori une bonne approche?
- Est-ce que d'autres solutions ont été envisagées ou, en d'autres termes, la stratégie est-elle basée sur une analyse d'alternatives possibles?

Objectifs, buts, extrants, indicateurs et principales hypothèses

- Les buts et les produits (extrants) étaient-ils définis expressément et avec précision?
- Le descriptif du projet indiquait-il des moyens pour mesurer ou à tout le moins, observer si les buts étaient réalisés et les produits obtenus?
- Les activités et apports du projet étaient-ils échéancés de manière réaliste et étaient-ils proportionnés aux résultats attendus du projet?
- Les buts, produits, activités et intrants du projet sont-ils énoncés en termes quantifiables et vérifiables?
- Les rapports entre apports, activités, produits, buts et objectifs étaient-ils clairs?
- Le descriptif du projet :
  . identifie-t-il des difficultés ou contraintes potentielles reliées à l'exécution du projet?
  . précise-t-il comment s'opérera le suivi des activités principales?
  . énonce-t-il des conditions critiques?
  . prévoit-il un poste «imprévus» au budget?
- Les risques encourus sont-ils clairement identifiés?

Bénéficiaires

- Sont-ils clairement identifiés?
- Les attentes, besoins et contributions potentielles des femmes ont-ils été reconnus?

- Mesures prévues pour susciter la participation des femmes à tous les niveaux du projet?

Structure institutionnelle du projet

- Quelle a été l'implication de l'IITA/AFNETA dans la confection du projet?
- Les capacités institutionnelles, les modalités de coordination du projet ont-elles été passées en revue et clairement énoncées?
- Les rôles et responsabilités des intervenants sont-ils clairement énoncés?

Plan de travail

- Un plan d'exécution ou autre outil de planification/suivi des activités du projet a-t-il été confectionné sans délai?
- Les plans de travail annuels sont-ils opérationnels et à priori réalistes?

2.0 Exécution du projet

2.1 Activités et apports des parties contractantes

- Relativement à chacune des activités importantes prévues, indiquer :
  - si son exécution est achevée;
  - si elle se déroule dans les délais prévus;
  - si l'on n'a pas encore prévu de commencer à l'exécuter, pourquoi?
  - si son exécution a été retardée ou si elle est en cours mais en retard;
  - évaluer brièvement qualité et ponctualité des apports;
  - si une activité nécessaire pour obtenir l'un quelconque des produits attendus du projet n'a pas été prévue dans le descriptif, la mission doit le noter et examiner si cette activité a été exécutée ou non;

- raisons pour lesquelles l'exécution de certaines activités n'a pas été satisfaisante : évaluer les mesures correctives prises et le succès de ces mesures;

- Les activités réalisées s'articulent-elles autour des trois volets d'intervention (soutien à la recherche et au développement, promotion auprès des systèmes nationaux et autres agences internationales de recherches agricoles, formation et vulgarisation);
- Coût des activités comparativement aux enveloppes budgétaires prévues;
- Efficience des activités : cette efficience a-t-elle été améliorée par une diminution du coût des activités?
- Adéquation entre activités, résultats et but(s) du projet;
- Adéquation des plans d'action et activités en regard des produits réalisés et attendus;
- Degré de réussite des activités de formation du projet;
- Responsabilités actuelles du personnel cadre du projet;
- Quels facteurs ont favorisé la réalisation des activités?
- Les parties prenantes ont-elles toujours été d'accord pendant l'exécution du projet? Y a-t-il eu des divergences sur les orientations, objectifs, résultats?
- Quels éléments internes et externes ont favorisé le déroulement des activités portantes auprès des NARS et des bénéficiaires?
- Quelles stratégies de base ressortent de l'exécution du projet? Y a-t-il eu innovation? Étaient-elles conformes aux politiques et approches de développement de l'ACDI?
- Quels sont les problèmes les plus importants auxquels le projet a été confronté durant son exécution?
- Expertise apportée par le projet : était-elle appropriée? Était-elle acceptable pour l'AFNETA? Y a-t-il eu transfert du personnel du CRDI au staff de coordination? Avec quel succès?
- Quels changements ont été apportés au personnel clef du projet durant son exécution? Quelles en ont été les conséquences?

- Faculté de l'équipe de direction du projet à répondre aux changements dans l'environnement du projet : qualité et ponctualité de cette réponse;
- Les engagements de chacune des parties impliquées (en termes de personnel, argent, support technique, administratif, ...) CRDI, IITA, ... ont-ils été respectés?
- Quelle est la capacité du personnel de l'AFNETA à poursuivre le projet à son échéance?
- Dans quelle mesure l'exécution de ce projet est liée au cadre régulier d'activités de l'agence d'exécution ou d'autres organismes impliqués?
- Gestion administrative et financière du projet, incluant gestion des intrants et du personnel; économies réalisées et dépassements budgétaires?

2.2 Qualité du suivi et de l'appui

- Qualité du suivi et de l'appui apportés au projet par les parties prenantes;
- Efficacité des examens annuels pouvant avoir eu lieu s'agissant de résoudre les problèmes les plus importants auxquels le projet est confronté (problèmes discutés, solutions trouvées, mise en place de ces solutions, ...);
- Soutien des collaborateurs et institutions participantes aux objectifs socio-économiques du projet;
- Quels mécanismes de suivi interne et d'évaluation du projet ont été mis en place (par le projet lui-même)? Étaient-ils adéquats? Quelle utilisation a-t-on faite des résultats?
- L'agence d'exécution a-t-elle pu améliorer ses procédures en matière de suivi/évaluation grâce au projet?
- Y a-t-il eu une supervision exercée par l'ACDI? A-t-elle pu contribuer à améliorer les procédures internes de suivi/évaluation et au succès du projet?

- Le projet a-t-il contribué à renforcer/établir des liens de coordination entre ACDI/FIDA/CRDI, etc.?
- Comment les appuis complémentaires financiers apportés par d'autres organismes se sont-ils intégrés dans les activités du projet?

3.0 RÉSULTATS DU PROJET

3.1 Extrants (produits)

- Quels sont les produits complètement ou partiellement obtenus (avec évaluation de la qualité, ponctualité, coût de chaque produit)?;
- Raisons et conséquences de la non obtention de certains produits?
- Quelle a été la progression, le rythme du projet en fonction des résultats attendus?
- Coût de production des extrants?
- Compte tenu des résultats, adéquation du concept du projet et de sa structure d'exécution à la problématique visée?
- Quels facteurs/paramètres ont favorisé l'obtention des résultats et les effets obtenus?

3.2 But(s) (objectifs immédiats)

- Le but du projet demeure-t-il pertinent?
- Les objectifs immédiats assignés au projet ont-ils déjà (suite au réseau mis en place et aux activités générées) été partiellement ou totalement atteints? Qualité et ponctualité de ce qui a été réalisé?
- Quels objectifs pourraient être atteints d'ici la fin du projet?
- Effets du projet sur les bénéficiaires qu'il était censé toucher. Effets des changements importants intervenus dans l'environnement dans lequel le projet est exécuté;

- Comment et dans quelle mesure l'obtention des produits du projet a contribué ou contribuera à la réalisation des objectifs immédiats du projet?
- Sur base des tendances actuelles, quels seront les bénéfices futurs du projet au niveau des bénéficiaires?
- Quel est l'aspect porteur de la technique «Alley Cropping System» auprès des populations paysannes africaines?

3.3 Objectif (de développement)

- La finalité demeure-t-elle pertinente?
- Dans quelle mesure et comment la réalisation des objectifs immédiats du projet permettra vraisemblablement une contribution ou la réalisation de l'objectif de développement, compte tenu des événements pertinents intervenus depuis l'approbation du projet?
- Évaluer la contribution effective ou potentielle du projet au développement des zones concernées et l'importance de cette contribution?
- Le projet est-il réellement important et dans l'affirmative, pourquoi?
- Les résultats enregistrés jusqu'ici attestent-ils que la culture en couloirs améliore les capacités biophysiques et humaines de production agricole?

3.4 Effets imprévus

- Quels sont les effets importants du projet qui n'étaient pas prévus dès le départ?

3.5 Maintien des résultats obtenus

- Quelles sont les possibilités de maintenir ce qui a été réalisé une fois que l'assistance internationale aura pris fin?
- Faut-il réaligner certaines activités?

- Besoins en soutiens techniques et financiers autres que ce qu'il y a présentement?
- Quels sont les éléments essentiels à considérer pour une décision sur une éventuelle prochaine phase?

APPENDIX (3)

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
EFFICIENCE	Soutien à la recherche et au développement, en vue d'adapter le système aux différentes conditions agro-écologiques et socio-économiques des pays cibles	Finalité poursuivie et stratégie mise en oeuvre	. Inventaires chercheurs et projets reliés à la culture en couloirs établis. . Attentes cernées. . Stratégie élaborée.	. Inventaires complets et mis à jour. . Stratégie cohérente avec les moyens humains/matériels et financiers de l'AFNETA.
		Démarches entreprises en vue d'identifier les diverses avenues de recherches	. Nombre, diversité et portée des thèmes prioritaires de recherches, au niveau criblage espèces végétales et adaptabilité aux sites écologiques, intégration composante élevage, techniques culturales, maintien fertilité des sols, problématiques, besoins et moyens population bénéficiaire, répercussions sociales (IFD, tenure des terres) et environnementales (gestion des ressources et changements qu'apportera l'agriculture en couloirs).	. Zones écologiques d'intervention délimitées. . Thèmes prioritaires cohérents avec problématique des diverses zones, mission AFNETA et orientations documents planification de projet. . Évolution du nombre de projets de recherches (achevés, en cours, abandonnés, en attente de financement, ...) d'ici la fin de 1993 selon les prévisions de l'AFNETA. . Nombre de pays, d'organismes et scientifiques devant participer au réseau selon les prévisions de l'AFNETA.
		Quelle est l'importance de la recherche en milieu réel et en station?	. Évolution du nombre de projets de recherches en milieu réel et en station. . Degré d'articulation, complémentarité et rétroaction entre les deux.	. Importance croissante du nombre de projets en milieu réel.

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		Coordination des efforts de recherches consentis par chacun des intervenants	. Guide en vue d'harmoniser les aspects méthodologiques. . Objectifs communs définis. . Nombre de banques de données établies, zones écologiques délimitées, *sous-comités de recherche* créés, rencontres de travail organisées, etc..	. Soutien à la recherche et au développement doit déboucher sur des modèles de référence de culture en couloirs pour les différentes zones agro-écologiques.
		Circulation/diffusion de l'information scientifique à travers le réseau	. Nombre de rapports annuels, bulletins périodiques, rapports de recherches, colloques, symposiums, séminaires spécialisés. . Importance diffusion (nombre d'abonnés?). . Fréquence de la parution des documents. . Éventail et portée des publications produites.	. Prévisions de l'AFNETA et attentes des usagers.
		Assistance technique de 1ère ligne au chapitre de la planification, programmation, suivi des projets	. Appuis techniques et méthodologiques apportés par AFNETA en matière de présentation des projets, mise en place protocoles, méthodologie recherches, gestion des fonds alloués, ... Nombre de missions de supervision/ projet réalisées et rapports établis.	. Prévisions AFNETA et attentes documents planification projet ainsi que usagers/bénéficiaires.

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		Support financier ou autre pour certains projets particuliers	. Politique de support aux projets en difficulté produite. . Critères de sélection des projets établis. . Nombre de projets préfinancés.	. Envergure de ce support.
	Promotion de l'AFS et des activités du réseau auprès des systèmes nationaux et autres agences internationales de recherches agricoles	**Importance des efforts de promotion envers les clientèles particulières**	. Nombre de pays cibles, organismes internationaux de recherches agricoles et autres donateurs contactés. . Nombre de tournées auprès des participants potentiels effectuées. . Résultats (ententes, accords) enregistrés. . Financements obtenus/convenus.	
		Stratégies	. Stratégie d'approche auprès des différents intervenants définie. . Stratégie de promotion du réseau disponible.	
		Intégration de la pratique de la culture en couloirs dans projets de développement des ressources du milieu	. Résultats obtenus.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
	Formation et vulgarisation	Envers les intervenants du réseau	. Nombre de chercheurs, techniciens et vulgarisateurs ayant bénéficié de programmes de formation. . Nombre de femmes participantes? . Sujets, type (stage/séminaire/visite/ démonstration) dates, durée, lieu, organisme hôte et nombre de participants avec profil pour tous les programmes réalisés (tableau récapitulatif).	. Adéquation contenu formation/besoins de la clientèle. . Importance vulgarisation/formation. . Programmes de formation formulés adéquatement en regard des produits réalisés et attendus.
		Population paysanne	. Idem.	. Adéquation contenu/besoins?
	Aspects socio-économiques de la diffusion et de l'adoption de la technique de l'agriculture en couloirs	Participation paysanne	. Mesures suscitées pour la participation des femmes et résultats. . Nombre de paysan(ne)s concerné(e)s par les essais sur le terrain en cours et planifiés d'ici la fin du projet?	
		Adoption technique	. Rythme d'adoption technique par petit(e)s paysan(ne)s?	
		Contribution	. Contribution des agriculteurs(trices) aux projets en termes d'observations, pratiques traditionnelles, effets observables, participation au processus de planification, ...	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		Résultats	. Enregistrés jusqu'ici et par zone agro-écologique en matière d'augmentation de rendements, protection du couvert végétal, produits et sous-produits de la culture en couloirs, superficies, ...	
		Comportements des chercheurs, agents de vulgarisation	. Comment les attitudes et les comportements des chercheurs/agents sont-ils qualifiés par les bénéficiaires ultimes?	
	Coordination par AFNETA	**Comité de pilotage**	. Rôles et responsabilités clairement définis. . Une réunion tenue annuellement et procès-verbal distribué. . Orientations stratégiques réseau et priorités d'intervention définies. . S'assure qu'une saine gestion est pratiquée.	
		Formation/séminaires/conférences	. Tous les stages de formation/séminaires/conférences planifiés et évalués. . L'ensemble du programme de formation vise à améliorer la capacité institutionnelle NARS et appuyer les recherches.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
	CRDI/ACDI et IFAD	**Programmation**	. 1 rapport de lancement. . 1 plan d'exécution (5 ans). . 1 plan de travail annuel. . 1 bilan annuel des activités/résultats. . Rapports trimestriels d'avancement.	. Termes de l'Accord de contribution ACDI/CRDI et protocole d'accord CRDI/IITA.
		Suivi de la progression du projet	. Mécanismes de suivi (et procédures) mis en place par CRDI Ottawa/Dakar et résultats. . Fréquence des missions de suivi effectuées par CRDI, objet, problèmes soulevés, solutions trouvées, mise en place de ces solutions et résultats.	
		Support à l'implantation du réseau	. Contribution technique et méthodologique apportée au niveau de l'implantation/structuration du réseau, développement d'une capacité institutionnelle et prise en charge.	
		Décaissements	. Fréquence et à propos des décaissements/besoins financiers.	
		Coordination des bailleurs de fonds	. Nombre, fréquence et objet des réunions IFAD/ACDI/CRDI tenues.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		Suivi financier	. Nombre et fréquence des rapports financiers produits et informations contenues.	. Adéquation du contenu de ces rapports avec les exigences de l'ACDI.
		Gestion	. Bien-fondé des principales décisions de gestion prises.	
	IITA/ILCA/ ICRAF	**Logistique**	. Adéquation du support administratif et logistique apporté par IITA à AFNETA (espaces bureaux, gestion de fonds, communications, ...)	
		Encadrement technique du réseau	. Respect des ententes conclues avec CRDI/ACDI et IFAD. . Capacité institutionnelle AFNETA/ NARS. . Orientations des recherches et avenues. . Pilotage du projet. . Suivi de l'état d'avancement des recherches. . Vulgarisation des résultats de la recherche. . Soutien aux activités de formation AFNETA.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		Promotion AFNETA	. Nombre d'organisations internationales de recherches participant actuellement au réseau grâce aux efforts de l'IITA/ILCA/ICRAF.	
	NARS	**Implantation recherche**	. Protocoles établis. . Contribution de la population paysanne aux projets de recherches mis en oeuvre.	
		Gestion financière et rapports techniques et financiers	. Ouverture du compte bancaire spécifique au prêt. . Présentés en conformité avec les exigences de l'AFNETA. . Rapports financiers semestriels et budgets prévisionnels reçus 6 semaines après la fin de la période couverte. . Rapport financier et technique final. . Utilisation des fonds exclusivement pour les projets autorisés. . Rapports techniques sur la progression en juin et annuel à la date anniversaire du contrat.	
		Orientation/programmation des recherches	. Appui méthodologique et technique reçu par AFNETA de l'IITA, ...	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		Diffusion des résultats	. Nombre de NARS ayant publié les résultats. . Nombre et importance des échanges établis avec d'autres NARS.	
		Suivi des recherches terrain	. Nombre de *missions suivi réalisées*/ projet annuellement et résultats. . Nombre de personnes (autres que AFNETA/IITA, ...) ayant visité les projets. . Nombre de missions suivi effectuées par AFNETA et résultats. . Culture en couloirs offre-t-elle une réponse appropriée aux problématiques zones?	
		Adéquation recherches/problématique	. Nombre de paysan(ne)s concerné(e)s par les essais sur le terrain. . Rythme d'adoption technique par petit(e)s paysan(ne)s. . Adéquation de la recherche en station/milieu réel. . Difficultés rencontrées.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	SOUS-QUESTIONS	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		Formation	. Nombre de personnes formées par AFNETA. . Pertinence de la formation reçue avec les recherches menées. . Appréciations des bénéficiaires sur la formation reçue et intégration de celle-ci dans les tâches confiées.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
EFFICACITÉ	Participants au réseau	. Nombre de pays, organismes de recherches, chercheurs, ONG, etc., membres de l'AFNETA. . Idem, ayant initié les projets de recherches sur la culture en couloirs avec assistance technique/financière AFNETA. . Répartition géographique et linguistique membres.	. Systèmes nationaux comptent pour plus de la moitié des participants au réseau. . Objectifs à atteindre que s'est fixé AFNETA d'ici la fin de 1991, 1992 et du projet.
	Projets de recherches	. Composition du portefeuille de projets de recherches AFNETA (à l'étude, en cours d'exécution, achevés, abandonnés, en attente d'un financement, etc.) par pays, par zone écologique, par thème principal (adaptabilité espèces végétales, techniques culturales, sols, population, impacts sociaux et environnementaux). . Zones écologiques d'intervention délimitées et bilan provisoire/zone établi. . Estimation du nombre d'ha exploités selon les techniques «Alley Farming» (AF). . Méthodes, collecte de données et procédures d'analyse normalisées. . Adéquation thèmes recherches selon les problématiques présentées à l'équipe d'évaluation sur le terrain. . Nombre de projets de recherches en station; potentiel biologique et technique qui en découle; nombre d'essais de gestion et d'évaluation en milieu réel et rétroaction entre les deux.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		. Nombre de paysan(ne)s concerné(e)s par ces essais (par zone écologique, pays) et contribution de ceux-ci. . Principaux résultats au niveau accroissement potentiel de production enregistrés. . Nombre de modèles de référence (ou systèmes d'exploitation agricoles) productifs, durables, acceptables pour l'environnement et n'exigeant que peu d'intrants déjà ou en voie d'être déterminés pour les diverses zones agro-écologiques. . Nombre de banques de données établies et utilité. . Nombre d'essais relatifs à la praticabilité et à la viabilité économique de l'agriculture en couloirs dans un environnement paysan menés. . Nombre de projets externes de recherches associatives (de concert avec des universités américaines/USAID) menés et d'ONG appuyant la mise en place des projets de recherches. . Quels approfondissements/maîtrise des connaissances relatives à l'adaptabilité/viabilité de l'AF, l'AFNETA a-t-elle dégagés jusqu'ici?	
	Séminaires, conférences, rencontres, ...	. Nombre de séminaires, conférences, colloques, ateliers, ..., tenus à date et planifiés d'ici la fin du projet.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		. Nombre de participants et répartition par zone agro-écologique/pays. . Coût moyen/participant(e). . Degré de satisfaction des participants rencontrés par équipe d'évaluation. . Résultats des séminaires, conférences, ... et suivi postérieur effectué.	
	Publications scientifiques	. Nombre de publications produites. . Idem / activités de recherches entreprises. . Objet principal des publications, diffusion (nombre d'abonnés, fréquence de parution, ...). . Portée, intérêt, utilité de ces publications selon les récipiendaires.	
	Formation	. Nombre de chercheurs/techniciens/vulgarisateurs/paysan(ne)s, formés à l'AF. . Nombre de stages de formation tenus, lieux, dates, objet, durée, profil/origine des participant(e)s. . Coût moyen de formation/participant(e). . Nombre de programmes de formation relatifs à la recherche dans exploitations et en matière de vulgarisation de l'AF. . Nombre de démonstrations effectuées en milieu paysan. . Nombre de stages évalués et résultats. . Appréciations des bénéficiaires sur la formation/le perfectionnement reçus.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
	Support financier	. Nombre de projets ayant bénéficié d'un support financier de l'AFNETA et localisation. . Objets principaux et envergure de l'enveloppe/ projet. . Justifications du support octroyé. . Suivi financier assuré et résultats.	
	Promotion du réseau	. Stratégie établie. . Résultats des démarches entreprises. . Nombre et portée des accords de collaboration technique signés. . Financements obtenus ou en discussion et objet. . Cohérence/complémentarité entre les appuis techniques et financiers obtenus. . Décaissements à date?	
	Coordination AFNETA	. Diversité/portée/pertinence des outils développés en matière de programmation/planification /évaluation des stages et séminaires; assistance technique/financière et développement organisationnel en matière de recherches auprès des NARS et projets terrain; suivi technique et financier résultats; planification/coordination/ gestion des opérations; circulation/diffusion de l'information. . Stratégies opérationnelles et résultats en matière de promotion/structuration/développement du réseau.	

MATRICE D'ÉVALUATION

AXES	QUESTIONS PRIORITAIRES	INDICATEURS OBJECTIVEMENT VÉRIFIABLES (I.O.V.)	NIVEAUX DE PERFORMANCE
		. Complémentarité/cohérence des relations entre AFNETA et IITA/ILCA/ICRAF.	
	Culture en couloirs : alternative valable à la culture itinérante?	. Nombre de régions/pays/zones agro-écologiques pour lesquels adaptabilité/praticabilité/viabilité de la culture en couloirs est démontrée? . Nombre d'ONG ou autres ayant adopté le concept de l'AF. . Nombre de programmes d'animation/vulgarisation en cours et population paysanne globale touchée? . Rythme d'adoption de l'AF par petit(e)s paysan(ne)s et difficultés rencontrées. . Appréciations des populations paysannes sur la situation avec l'AF/situation préexistante (rendements, produits et sous-produits, temps travail, protection couvert végétal, intrants, ...).	

APPENDIX (4)

AFNETA - PROJECT EVALUATION

TERMS OF REFERENCE

------<><><><>------

SECTION ONE: ACTIVITIES TO BE EVALUATED

The Alley Farming Network for Tropical Africa (AFNETA) is a multi-donor supported project funded by grants from CIDA, IDRC, IFAD and DANIDA.

IDRC/CIDA: Centre File Nº 3-P-88-0025	-	US$3,166,000
IFAD Tech. Asst. Grant Nº 190 - IITA	-	US$1,220,000
DANIDA: Grant	-	US$70,000

Life of Project

CIDA funding is for 5 years:	-	1989-1993 and supports the network secretariat.
IFAD funding is for 3 years:	-	1990-1992 and supports NARS research activities.

DANIDA funding was a one-time grant to support preparatory and take-off activities.

SECTION TWO: PURPOSE OF THE EVALUATION

The purpose of this evaluation is to assess the performance of AFNETA in accordance with the objectives specified in the IDRC/CIDA and IFAD Grant Documents in support of the network, and in line with the goals and objectives established for the network at its inception (Appendix 1). This evaluation is a combination of a mid-term evaluation for the CIDA/IDRC component and an end-of-phase evaluation for the IFAD component.

The Evaluation will review AFNETA efforts to develop research collaboration among the NARS in close collaboration with IITA, ILCA and ICRAF. The purpose of this mid-term evaluation is also to provide project management with recommendations and strategies in the following key areas:

- The establishment of the network

- Its operation strategy
- Its management and coordination
- Its major activities in line with network objectives
- Its achievements in various network objectives
- Its support to NARS in the development of their alley farming Research Programs
- Its contribution to training and capacity building of NARS
- Its effectiveness for promoting information exchange among NARS
- Its linkages with other institutions and development/extension organisations.

BACKGROUND TO AFNETA

Realizing the potential of alley farming as a sustainable low input production system, participants in the Alley Farming Workshop held at IITA, 10-14 March 1986, proposed the establishment of an Alley Farming Network for Tropical Africa. IITA and ILCA were mandated by the workshop to develop a network proposal and seek donor support for the set-up and operation of the network.

With some start-up and coordination funds provided by the Canadian International Development Agency (CIDA) and the International Develop-ment Research Centre (IDRC), AFNETA was finally born in November 1988 and commenced operation in February 1989.

This network was entrusted with the responsibility of bringing together scientists from various countries in tropical Africa interested in alley farming research and/or development. The network was to promote widespread research on alley farming, organise training activities and coordinate information dissemination and exchange among national research institutions and international agricultural research centres, (IARCs). Three IARCs—IITA, ILCA, and ICRAF, were mandated to act as the parental base of the network and provide technical backstopping support.

In 1989 AFNETA synthesized research project proposals on alley farming that had been received from about twenty-eight national research institutions from seventeen countries into a single project proposal. This was submitted to IFAD, and in December 1989 IFAD made a grant of US1,220,000 for the support of NARS research. Since the commencement of the IFAD Grant, five additional projects have been partially supported by the network.

PROJECT OBJECTIVES

(a) Objectives of the CIDA/IDRC Grant

- The overall objectives of the research project is to support the coordination of the Alley Farming Network for Tropical Africa (AFNETA), established to promote alley farming research and the on-farm testing, use and extension of the concept across diverse environments in Tropical Africa.

- To arrange suitable training programs on both central and regional basis, and to assist national programs to organize appropriate training for both on-farm and on-station alley farming research and development.

- To promote information development and exchange among NARS and with IARCs, in alley farming research.

- To enhance capacity-building and institutional strengthening of NARS.

(b) Objectives of the IFAD Grant

- The general objective of the IFAD Grant is to support national research institutions in the organization, initiation and execution of research, aimed at the development of sustainable cropping systems based on the alley farming principle, in different agroecological zones of sub-Saharan Africa.

- To provide supplementary support for the coordination of the network.

Specific research objectives under IFAD grant

a) To identify suitable tree species which could be used for alley farming in the different agroecological zones and on different soil types.

b) To assess the efficiency of alley farming using different tree species, the maintenance of soil fertility and enhancement of crop yields in different agroecological zones.

c) To identify and define management systems required for the optimum operation of alley farming in the different zones.

d) To evolve management strategies within alley farming for integration of livestock (small ruminants) into the system.

e) To study the effect on crop production and yield, following integration of livestock into the system.

f) To assess the effect on livestock productivity, of feed supplementation with alley farm fodder.

g) To evolve a short fallow rotation system within alley farming for enhancement of sustainability of production, suppression of weeds and supply of fuelwood and poles from the fallows.

h) To assess through on-farm research and development activities, the relevance and acceptability of alley farming for smallholder farmers in the various zones.

i) To identify, through development/extension-oriented on-farm trials, management and other problems requiring further on-station research.

SECTION THREE: STRATEGY FOR THE REVIEW

1. Need for joint, rather than separate review

Since the two grants (IDRC/CIDA and IFAD) are supporting different aspects of the same program, and since these aspects are not independent, but are mutually inter-twined, it is proposed that a joint donor evaluation be held rather than independent or separate donor reviews.

2. Need for flexibility in review strategy

Since the two donor groups all have their separate strategies for project review, a joint review program will require a lot of flexibility and compro-mise, and a holistic approach to project evaluation.

3. Components of the review

The review process should reflect the two main arms of the network structure - the coordination and the ground (membership) activity, as well as the management and technical support to the network. There will, thus, be three main components of the review:

(a) Coordination activities

The effectiveness or otherwise of the coordination activities would need to be assessed at three main levels:

- network secretariat i.e. IITA
- collaborating IARCs i.e. ICRAF, ILCA, IITA
- NARS partner institutions

Issues to be assessed at the coordination level will include:

- Effectiveness of project management
- Financial management
- Effectiveness in organization of training, workshops and conferences
- Effectiveness of the steering committee
- Effectiveness of administrative, management and technical support.

(b) Membership activities

The effectiveness or progress in implementation of the ground or membership activity would be assessed principally at NARS level and should cover aspects such as:

- Effectiveness of research implementation
- Future prospects and research orientation (Phase II research proposal)
- Institutional building and linkages issues
- Linkage with development/extension agencies
- Mechanisms for strengthening institutional aspects of the project
- Financial management and reporting

(c) Management and Technical Support Considerations

This will be assessed at two levels:

(i) Performance of IARCs - critically assess the performance of IITA, ILCA and ICRAF in providing assistance/guidance in:

- Technical backstopping of network research;
- Administration, coordination and management of network;
- Training;
- Effectiveness of logistical support;
- Financial management

Also explore any complementarity and competitive relationships that might exist between AFNETA and these 3 IARCs.

(ii) Performance of IDRC/CIDA and IFAD management in terms of:

- Participation, backstopping and contribution to network implementation
- Timeliness of release of funds;
- Provision of inputs;
- timeliness of management decisions; and
- Feed-back on project implementation progress - issues and problems.

4. Projects to be visited and Nature of mission schedule

The evaluation team will visit selected projects in 6-8 countries in sub-Saharan Africa. In selecting the projects to be visited care will be exercised so as to include projects in all levels of performance.

The evaluation team will assemble in Nigeria and will review activities of the coordination unit, and assess IITA backstopping facilities and activities. The entire group will also visit some AFNETA projects in southern Nigeria and in the Republic of Benin.

Subsequently the group will be split into two, with each team visiting projects in three other countries. Team A will visit projects in West and Central Africa (Ghana, Côte d'Ivoire, Cameroon) while Team B will visit projects in East and Southern Africa (Kenya, Uganda, Malawi).

The two teams will re-group at IITA to begin work on reconciliation, analysis and preparation of report. The draft report will be presented to the AFNETA Steering Committee, three days before the end of the evaluation period, for their comments and input.

Information on the countries and institutions to be visited is given in Appendix 2, while Appendix 3 gives the program of visit. A budget estimate is also given in Appendix 4.

SECTION FOUR: EVALUATION TEAM COMPOSITION

The evaluation group shall consist of 6 members, one of whom would be the technical leader. The AFNETA Coordinator and his assistant would be resource persons for the evaluation. The group will work together as one team during the first week and also during the last two weeks of the evaluation. In the intermediate weeks (weeks 2 and 3) the group will split into two, with each team visiting a different set of countries (See Appendix 3).

The evaluation group will consist of

- 2 agroforesters
- 2 socio-economists
- 1 Livestock expert
- 1 Soil/agronomy expert

Each team will thus have one agroforester and one social scientist. The third member of the teams shall be either a livestock expert or an agronomy/soils expert, depending on their relative relevance for the projects to be visited in the particular zones. One AFNETA Coordinator will be with each team as resource person.

Time and duration of the evaluation

The evaluation will be conducted from 15 July to 20 August 1992—five weeks. Three weeks will be for project visits and two weeks for report preparation.

SECTION FIVE: REPORTING REQUIREMENTS

The technical leader will have overall responsibility for preparing the evaluation report. At the beginning of the evaluation process, the technical leader will apportion the writing to individual members so that the writing will be shared out equitably. The report will include a synthesis of the reports prepared by other members, documenting the salient issues, progress and constraints identified during the course of this evaluation as outlined in the scope of work.

The team leader will submit to the Director of Resource and Crop Management Program 10 copies of the report two days before the team leaves IITA. The report will include the following:

(i) An executive summary of four pages in length including the purpose of the evaluation and methodology used, findings, conclusions, lessons learned and recommendations;

(ii) Body of the report of not more than 45-50 pages including a discussion of the purpose of the evaluation, the study questions and the significance of the resulting recommendations; and,

(iii) Appendices (including technical management issues raised during the evaluation requiring greater elaboration, a copy of the evaluation scope of work, a brief annotated bibliography of the documents and reports consulted, and a list of persons and agencies consulted).

Following the submission of the report, a preliminary working session will be held between IITA, the evaluation team and representatives of the AFNETA Steering Committee to discuss the findings and recommendations. The team leader will then incorporate in the final draft version of the report, the subsequent consideration of any questions or issues raised during this initial review meeting. The team leader will submit ten copies of the final draft report to IITA prior to his departure from Ibadan.

Appendix 3
Summary Itinerary for AFNETA Evaluation Mission
15 July - 20 August

Country	Period	Evaluation Teams
NIGERIA	15 - 18 July	Both teams (A&B)
REP. OF BENIN	20 - 21 July	Both teams
GHANA	23 - 27 July	Team A only
COTE D'IVOIRE	29 - 31 July	Team A only
CAMEROON	02 - 04 August	Team A only
KENYA	24 - 28 July	Team B only
UGANDA	30 - 31 July	Team B only
MALAWI	03 - 04 August	Team B only
NIGERIA	06 - 19 August	Both teams (A&B)
20 August - END OF MISSION		

Countries	Institutions	Agro-Ecological zone	Main Research Components	Type of Research	Year of Commencement
Nigeria	- Univ. of Ibadan	S.H	tree/crop/soils/mycorrhiza	OSR	1990
	- Imo State Agric. Dev. Project	H	tree/crop/erosion	OSR; OFR	1990
	- Rivers State Univ. of S & T	H	tree/crops/soil/socio	OSR; OFR	1990
Benin	- Institut des Recherches Zootechniques et Veterinaires	S.H.	tree/grass/livestock	OSR	1990
	- Institut des Recherches sur les Cultures Vivrières	S.H.	tree/crops/soil/fallow	OSR; OFR	1990
	- RAMR Project, Mono Province Province	S.H.	tree/crop/livestock	OFR/DEV	1987
Ghana	- Inst. of Renewable Nat. Res.	H	crops/soil fertility	OSR; OFR	1990
		S.H.	crops/soil fertility	OSR	1990
	- Forest Res. Inst. of Ghana	SA	crops/soil fertility	OSR	1990
Cote d'Ivoire	- Institute des Savannes I		tree/crop/soils	OSR	1990
	- Institute des Savannes II		tree/crop/fruit/fallow	OSR	1988
Cameroon	- Institut de la Recherche Agronomique	H	tree/crop/soil/fallow mgt.	OSR; OFR	1990
	- Institut de la Recherche Zootechnique	H	tree/grass/livestock	OSR	1990
Kenya	- Kenya Agric. Res. Inst.	S.H.	tree/grass/crops/soil	OSR/OFR	1988
	- Kenya Forestry Res. Inst.	S.H/HL	tree/crop/fodder/soils	OSR/OFR	1989
Uganda	- Makerere University	S.H./HL	crops (banana)/soils	OSR	1989/90
	- (Forestry Min./CARE-Uganda)	S.H.	banana/Leucaena/soil	EXTN/OFR	1987
Malawi	- Bunda College	S.H.	tree/crop/soil	OSR	1990
	- Tobacco Research Inst.	S.H.	tree/crop/tobacco/soil	OSR	1990

1. H = Humid zone; SH = Sub-humid; SA = Semi-Arid; H.L. = Highland
2. The central focus in all projects is alley farming, thus the tree component is present in all trials.
3. OSR = On-station Research
   OFR = On-farm Research
   EXTN = Extension

THE AFNETA GOAL AND TARGETS

It is the goal of AFNETA to make a significant contribution towards the development of sustainable cropping systems, based on alley farming and general agroforestry principles, for different agroecological zones in sub-saharan Africa. The primary partners in this task are the scientists of National Agricultural Research Systems (NARS) and development-oriented national agencies with support from three international agricultural research centres (IITA, ILCA and ICRAF) and a number of donor agencies. The ultimate clientele and beneficiaries of the network however, are the millions of small scale farmers cultivating agricultural land in the tropics, with little or no resources for the maintenance of soil fertility and enhancement of crop productivity. The network also aims at contributing to the reduction of environmental destruction and natural resource degradation through improvements in the efficiency and stability of land use under smallholder farming systems.

For the first five-year phase of the network, a number of targets have been set, in different activity components, for the attainment of the network's objectives. These targets are meant to serve two purposes. First, to guide the network in the development of its programs, and second to provide a means for the assessment and evaluation of the performance of the network at different stages of its operation. These targets are presented below for the various components of the network's operations.

Collaboration with NARS

There cannot be a network without members. The AFNETA network aims at bringing together scientists of NARS institutions to work together for the development of sustainable cropping systems in their various countries. The number of countries, institutions and scientists projected for the first five year period of the network is shown in Table A1.

Table A1. Projection of Collaborative Research Partnership with Countries, National Institutions and Individual Scientists in AFNETA, 1989 - 1993.

	1989	1990	1991	1992	1993
Countries	17	20	20	25	25
Institutions	28	32	32	45**	45**
Scientists*	40	45	50	65**	65**

* This refers only to those directly involved in collaborative research activities with AFNETA.

** The assumption for the increase in number of institutions and scientists is that the second batch of NARS research proposals submitted to a donor agency will be funded.

Collaborative Research

The central activity of the network is collaborative research. AFNETA provides a mechanism for promoting research and development activities on alley farming among national agricultural research institutions. The projection of countries and institutions with which AFNETA will have research partnership in the period 1989 - 1993 are already given in Table A1. Table A2 below gives the

projections of experiments in the four major research domains that would be established with NARS.

Table A2 Projections in AFNETA/NARS collaborative research experiments between 1989 - 1993

Type of Research	Year					
	1989	1990	1991	1992	1993	Total
Tree species screening	2	22	4	-	-	28
Alley Farming (AF) management	4	17	12	8	2	43
AF livestock integration	-	2	2	1	-	8
AF on-farm socio-economic research	-	4	12	20	25	61
Total	6	46	30	32	27	140

This projection reflects the orientation of the network's research activity towards on-farm, farmer-participatory research with strong socio-economic component. Such on-farm focus is necessary to ensure the research projects are farmer-oriented and will lead to an assessment of farmer acceptability and the system's potential for adoption.

Training

Training has a major role to play in the promotion of a technology such as alley farming. It is essential for the enhancement of technical understanding and capability of NARS scientists and technicians to ensure uniformity in research implementation and

analysis of network-sponsored research. The network also encourages and induces training of extension agents and farmers at the in-country level, for the enhancement of the systems transferability and adoptability.

Projections of the network's training activities for the period 1989 - 1993 are given below in Tables A 3 and A 4.

Table A3: Projection of number of participants from National Institutions attending AFNETA courses between 1989 - 1993

	Year					
Type of training	1989	1990	1991	1992	1993	Total
Individual training						
• Local attachment	-	4	-	4	4	12
• External attachment	-	3	5	2	-	10
Total	-	7	5	6	4	22
Group training						
• Regional	-	75	50	50	50	225
• Central	25	-	20	20	-	65
• Trainer-Training Workshops	-	20	-	20	-	40
Total	25	95	70	90	50	330

Table A4: Projection of training courses to be organized by AFNETA for National Institutions between 1989 - 1993

	Year					
Type of training	1989	1990	1991	1992	1993	Total
. In-country*	-	1	2	2	3	8
. Regional	-	3	2	2	2	9
. Central	1	-	1	1	-	3
. Trainer-Training Workshop	-	1	-	1	-	2
Total	1	5	5	6	5	22

* In-country courses are organized at the initiating of national institutions, and do receive some support from AFNETA.

Information Exchange

Effective information exchange is a major requirement for collaboration among network members and partners, and will receive serious attention throughout the period. Projections of major meetings, workshops and conferences, and the release of the network newsletter are given below.

Table A5. Projections of Information Exchange Mechanisms in AFNETA , 1989 - 1993

	1989	1990	1991	1992	1993	Total
General Membership Meetings	1	1	1	1	1	5
Workshops/Conferences			1*		1	2
Newsletter "AFNETAN"	2	3	3	4	4	16

* The International Conference for 1991 has been moved to 1992.

APPENDIX (5)

Annexe 5.

LISTE DES CONSULTANTS - EVALUATION AFNETA

1. Dr. E. Jane Carter
   Overseas Development Institute
   Regents College, Regents Park
   Inner Circle
   London NW1 4NS
   United Kingdom

2. Mr. R. Jim Cheatle
   Vice-President
   World Association of Soil & Water Conservation
   P.O. Box 39042
   Nairobi
   Kenya

3. Dr. M. T. Dahniya
   Institute of Agricultural Research
   P.M.B. 540
   Freetown
   Sierra Leone

4. Prof. T. E. Ekpenyong
   Faculty of Agriculture & Forestry
   University of Ibadan
   Ibadan
   OyoState

5. Mr. Henri Lestringant "Team Leader"
   325, Rue Nantel
   Saint-Eustache(Québec)
   Canada J7P4P6

6. Mr. Shantanu Mathur
   Economist
   Rome
   Italy

APPENDIX (6)

Meeting with IITA/AFNETA Staff on the Draft Evaluation Mission Report - Minutes

Following is a summary of the salient points/issues discussed at the above-mentioned meeting. (List of participants is attached).

The meeting commenced with Dr. Mike Swift, RCMD, IITA proposing that the Team Leader of the Evaluation Mission highlight the findings of the mission in order to provide the basis for further discussion on any specific issues raised by the Evaluation Team.

In response, the team leader provided an overview of the framework and spirit within which the Evaluation of AFNETA was planned and executed as well as the current status of the report and the major findings and recommendations emerging from the evaluation process.

In particular, he stated the following:

General

The detailed TOR of the Mission were prepared by IITA/AFNETA and approved by the donors IFAD/CIDA/IDRC. These donors were actively involved in the planning process and participated in the preparation of the outline of the mission's work. These were later tailored by the mission to suit its intended task and to make it more conducive to the content of the report. The collaboration of the Coordination Unit in the logistics and in clarifying substantive issues during the course of the mission was crucial to its success and the team appreciates this. The time constraints resulting from the mission's tight schedule, with only nine days available for report writing, necessitated sharing of responsibilities and inputs among the members of the mission. However, the final document represents the views of the entire team. Indeed, each member has had a substantial involvement in reviewing and in providing inputs where appropriate, in all sections of the report. It should be recognized that at the time, the document was a draft and would be finalized by 21 August, 1992, when the mission leader was scheduled to leave. A final report duly translated into French and English would then be transmitted to the Donors.

Findings

The mission recognised the formidable task of AFNETA and was impressed by the work accomplished over the past three years. The mission notes, however, that there was some lack of clarity and certain inconsistencies in the design and concept of the project as defined in the Project Agreements which resulted in some conflicts

in the interpretation of the objectives, timeframe and content of the programme during implementation. IITA/AFNETA should have carefully considered the task that was set before them in the project financing agreement documents before agreeing to undertake it within the timeframe defined by the project.

The Coordination Unit has performed exceptionally and the mission recognises that the Coordinator and Assistant Coordinator have been implementing a task which is well beyond the capacity of a Unit manned by two professional personnel.

The role of the Steering Committee was found to be inadequately described in the TOR, in terms of its overall powers and direct involvement in decision-making on key aspects of the strategy and programme formulation of the network.

The mission recognises the success of the programme, especially in terms of its laudable achievements in establishing and operationalising a network of a large number of NARS, with a strongly founded coordination unit.

The Evaluation Team notes that the field activities of the NARS have initially been oriented more towards research as an end in itself and not sufficiently focused on developmental aspects. However, on the whole the mission is satisfied with the level of attainment and recognizes and fully endorses the shift in emphasis from on-station research to on-farm development-oriented research already being envisaged by AFNETA coordination in a major way, for the network's future activities.

The evaluation has taken into account the difficulties associated with the weaknesses of NARS and the initial need for training and capacity building, which impeded the manner in which some of the research was conducted, especially in the context of its effectiveness and adequate responsiveness to the realities on-farm.

In the latter context, the mission had some specific issues.

Research

Given the need for the Steering Committee to approve (or reject) all NARS proposals, the mission was unsure whether this procedure was always followed, since it had not yet seen formal evidence of this.

The mission noted that some of the trials visited did not have any protocols, especially where OFR was involved. Sometimes the protocols were modified and reflected structural differences from the original agreements. Modifications to the protocol were not accompanied by the required budgetary adjustments. The mission was also not able to discern the extent to which the NARS were given the mandate to modify approved protocols.

In quite a number of circumstances, the research being undertaken by the NARS had not adequately built on experience with alley-farming research elsewhere in those countries/region. Thus, the research in these cases did not take adequate account of lessons learnt. Nor could they be considered useful in making a net additional contribution to what had already been accomplished. In these instances, the effort thus became a capacity building exercise through an OSR-emphasis with limited sensitivity to issues of adoptability. . The OSR/OFR nexus was interpreted to be one in which the two did not appear to be mutually supportive but were rather seen as mutually exclusive exercises with distinct objectives. This could be seen to be undermining the direct relevance and efficacy of the OSR work done thus far, to the adoptability of alley farming, a crucial objective of the programme. This is exemplified by a number of experiments visited by the mission, including an OSR trial in Cameroon based on maize as the only crop, while the farming systems in the entire region were based on very different production systems incorporating intercropping/mixed cropping practices. The approach pursued thus far therefore, has been technology driven, rather than one which could respond to farmer-requirements and realities on-farm.

The mission has tried to adopt a proactive, rather than a reactive approach, especially in the context of the evaluation of the research content of the programme. Its critique of the concept and design of the programme as enshrined in the project agreements, as well as its evaluation of the implementation which was by-and-large found to be based on the content (and not necessarily the spirit) of those agreements, must be seen in this light.

Training and technical backstopping

In the context of the other major component of training and capacity building, the evaluation concludes that the achievements have been very positive. It has been dynamic and decentralised but needs to be further strengthened to respond to other specific training needs of the NARS scientists and technicians. There is room for improvement in the choice of participants, selection of courses (inclusion of other subject matters of relevance to AF - livestock integration, for instance), involvement of extension development-oriented personnel.

IARC-backstopping has been generally satisfactory. IITA has provided substantial research and logistical support, although the mission felt that in spite of the recognition by IITA of AFNETA as a major initiative which is an intrinsic part of the institute's programme of work and budget, the 'special programme' did not always enjoy an equitable share of "services" which had to be negotiated on a case-by-case basis. This may have been a problem of absence of a formally planned and budgeted assistance. The support of the other founding IARCs has also been significant, although this has been mainly confined to training support.

Special acknowledgement is made of free training materials and logistical support received by AFNETA from all three IARCs.

Recommendations

The Team leader referred to the Chapter on recommendations and stated that they have been drawn from the findings outlined above.

The Chairman clarified whether the principal recommendations could be grouped, in the main, into three clusters as follows:

(1) It is necessary to have a thorough review of all on-going research sub-projects according to a set of defined criteria of efficacy and status of implementation in order to derive firm conclusions on whether some of the experiments should continue or not.

(2) It was now very important for AFNETA to make a concerted effort, somewhat along the lines already being planned, to translate the objective of discerning the adoptability of the technology. Towards this it would employ a comprehensive participatory rural identification/appraisal process to select some sites (five to six) which would provide the target areas for testing the adoption potential of alley farming.

(3) The role of the steering committee would need to be strenghtened and augmented in order that it could execute the terms of reference given to it, effectively. Indeed, it should be seen as the main arm of the network which drives the project and is intensely involved in guiding and articulating the policy and strategy of AFNETA.

This was accepted by the mission to be the main set of recommendations, although recognizing that there were a number of others which were directly or indirectly related to the above - mentioned clusters.

Comments

IITA/AFNETA staff at the meeting commented on the above mentioned findings and recommendations and also raised issues related to the main body of the text of the draft report. Dr. Uriyo ICP, clarrified that the AFNETA steering committee had explicit terms of reference which were formally approved by the network members at the innaugural AGMM of the network in 1989. In accordance with those TORs the committee was responsible for approving all sub-projects proposed by the NARS, after they were appropriately screened by the coordination unit. Evidence of this is available in the minutes of specific meetings of the SC on various occasions and these would be provided to the mission.

The coordinator acknowledged that the short time frame of the IFAD project precluded a thorough on-site appraisal of each sub-project. The issue of the need for peer review was well taken

although again the need for expeditious commencement of the trials in the first phase would not have allowed such rigour. He drew attention to the fact that a number of proposals received included citations and bibliographies which reflected that the researchers had, indeed taken cognisance of ongoing alley farming efforts in casting their proposals.

He also informed the meeting of the fact that the project had been implemented in accordance with the design and concept as was fully discussed with IFAD and described in the project document. The importance of on-farm research and socioeconomics was fully recognized by the coordination unit and mechanism to pursue a farmer responsive approach was in place. As reflected in the project documents and in particular, the IFAD financing agreement, it was planned to move from the onstation context onto the onfarm situation. At the outset the premise was for capacity building of NARS to be able to participate in the OFR as and when practicable. It was time to make the shift from and OSR emphasis to OFR and this intention is clearly stated in various documents with the mission. Therefore, there was a need for the mission to acknowledge the effort of the coordination unit and AFNETA in general to move in this direction irrespective of whether the evaluation mission was making a specific recommendation in this regard (special reference was made to three sections of the report dealing directly with these issues).

The mission clarified that it had already discussed the context of the above issue in the chapter on project concept and design and had fully recognized that these had indeed been followed, by and large, during the implementation of the program. However, it drew attention to the fact that the essence of its constructive critique of the project was not so much in the context of the sequential approach adopted in the design and execution of the program but more in terms of desirability of a more farmer - responsive OSR effort.

Some minor issues regarding the AFNETAN newsletter were put forward for the consideration of the mission.

The chairman concluded by thanking the team and congratulating them for the evaluation. He expressed his hope that the team will examine the issues raised at the meeting and will consider them in the preparation of the final draft. The coordination unit should provide the mission with any specific comments on the contents of the draft report for its consideration.

The main suggestion of the coordination unit was to place the discussion on the project concept and design early in the report. This would facilitate in putting into perspective, the content of the main body of the report.

18/8/92: 2.00 p.m.

Meeting

Discussion on Evaluation Report

	Name	*Affiliation*
1.	Mike Swift	RCMD, IITA
2.	Aziadome Kogblevi	AFNETA (Chairman)
3.	E.F. Deganus	ICP/IITA
4.	Asamoah Larbi	ILCA
5.	A.P. Uriyo	ICP/IITA
6.	K. Atta-Krah	AFNETA
7.	Joseph B. Suh	ICP/IITA
8.	J. Gulley	Training/IITA
9.	N. Sanginga	AFNETA
10.	Jimmy V. Smith	ILCA
11.	Jane Carter	ODI/AFNETA Evaluation team
12.	Jim Cheatle	WASWC/ " " "
13	Henri Lestringant	Mission Leader " " "
14.	Shantanu Mathur	Economist/AFNETA Evaluation Team
15.	Tommy E. Ekpenyong	Universitu of Ibadan/AFNETA Evaluation Team
16.	M.T Dahniya	IAR, Sierra Leone " " "

INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE

INTER-OFFICE MEMORANDUM

INTERNATIONAL COOPERATION

To: Chairman: AFNETA Review Panel Date: August 19, 1992

From: A.P. Uriyo CC: Dr. J.P. Eckebil
Mr. E.F. Deganus
Dr. M. Swift
Dr. A.N. Atta-Krah
Dr. N. Sanginga

Subject: Draft Review Report for AFNETA

I have just had a quick reading of the report and here are my observations which if taken into account, will correct some of the apprehensions expressed at the meeting yesterday.

1. Evolutions of the Institutional Research Projects

When I read your report the impression I got was that somebody at the top could have drafted the proposals for the NARS.

The procedure was as follows:

(a) NARS were informed of the formation of AFNETA and invited to submit research proposals that would be reviewed by the AFNETA Steering Committee and if found suitable would be collated into a unified project proposal for submission to a donor. A format on how to go about drafting the proposals was sent along and a copy is attached.

The proposals received were reviewed by the AFNETA Ad Hoc Steering Committee at their meeting held at IITA 26-28 September 1988. The meeting was also attended by resource persons from IITA, ILCA and ICRAF. The minutes of this meeting are attached. Some projects were accepted in principle, others required modifications while others were rejected. I must say that this peer review was very rigorous because even one member of the Steering Committee who was present had his project rejected outright because of technical shortcomings.

The Institutions who had submitted their projects were informed of the out-come and those who had to revise their projects were informed of what to do. IITA, ICRAF and ILCA were given specific countries to visit and work with the NARS in revising their projects.

AFRENA worked with the two institutes in Malawi in finalizing their project proposal. AFRENA was not to tell the Malawi institutions what to do. Although your report is critical of the work in Malawi, AFRENA which has worked in Malawi could do no better to alter the cause of things, and the statement that AFNETA should leave activities in some part of Africa to AFRENA is premature as it is not supported with data.

The revised draft project proposals received from the collaborating institutions were collated into a unified single project proposal that was submitted to the AFNETA Ad Hoc Steering Committee meeting held at ICRAF House Nairobi 15-16 May 1989 (Minutes are attached). The proposal subject to making some minor modifications, was approved by the Steering Committee for submission to IFAD.

This was a bottom-up approach whereby the NARS decided what were their problems and how they were going to solve them given the resources available.

2. Terms of Reference for the Steering Committee

Reading your draft report, one gets the impression that there are no terms of reference for the Steering Committee. Please, they exist, and the Coordinator should make them available. It should be interesting if the panel can analyse them and suggest where improvement is needed.

3. Involvement of members of the Steering Committee in the day to day administration and management of the Network

The AFNETA Steering Committee meeting held in Nairobi in January 1992 took a decision that the Steering Committee was an executive entity and that its members should not be involved in management of the network. This is an issue the Steering Committee had already resolved and it is not a finding by the Panel to appear in the report. The minutes of the last AFNETA Steering Committee meeting held in Nairobi in January 1992 can be made available to you by the coordination office.

atts.
auw*

APPENDIX (7)

PROGRAM OF VISIT FOR AFNETA EXTERNAL EVALUATION TEAM TO IITA

15-17 JULY, 1992.

Tuesday 14 July	Arrival of Evaluation Team
Wednesday 15 July	
09.30 hrs	Meet with Dr. Spencer, Director, Resource and Crop Management Division (RCMD)
10.00 hrs	Coffee with RCMD Scientists
10.30 - 12.30 hrs	Field visit - IITA On-station Alley Farming trials (Drs. Ladipo, Kang, Sanginga)
12.30 - 13.30 hrs	Lunch
14.00 hrs	Meet with Dr. J. Eckebil, Deputy Director General, International Cooperation Program
14.30 hrs	Technical Session I Overview Presentation of AFNETA Activities Institutional Collaboration Research Training Information exchange
17.00 hrs	Planning Meeting (consultants)
Thursday 16 July	Evaluation of IITA/ILCA Technical/Admin Backstopping
08.00 - 10.00 hrs	Visit ILCA, Ibadan
10.30 - 12.00 hrs	Meet ICP, IITA (Drs. Eckebil, Uriyo)
13.30 - 14.30 hrs	Meet Training Unit, IITA (Drs. Gasser, Gulley, Mr. Obubo)
14.30 hrs	Meet RCMD, IITA (Drs. Spencer, Swift, Kang, Ladipo, Mulongoy, Dvorak, Jagtap)
16.00 hrs	Meet Dr. Lukas Brader, Director General
Friday 17 July	
08.00 hrs	Meet Mr. Governy, Director, Budget and Finance
09.30 hrs	Visit Alabata - AFNETA/RCMD Task force. On-farm Alley Farm Project
12.30 hrs	Lunch

14.00 - 17.00 hrs	Free for further consultation
19.00 hrs	Cocktail

Saturday, 18 July

07.00 hrs	Depart for Port Harcourt and Owerri

PROGRAM OF VISIT OF AFNETA EVALUATION TEAM TO S.E. NIGERIA, 18-19 JULY 1992.

Sat., 18 July

08.00 hrs	-	Depart Ibadan
11.00	-	Arrive Port Harcourt
	-	Meet AFNETA group, Rivers State Univ. of Science and Technology, (RSUST) Preliminary presentation of project
12.00	-	Depart for Onne
12.30	-	LUNCH at Onne
14.00 hrs	-	Field Visit: - RSUST AFNETA trial - IITA RCMD Alley Farming trials
16.00 hrs	-	Depart for Mbaise - Visit traditional farmer "alley farms" with *Acioa barterii.*
19.00 hrs	-	Arrive at Owerri (night at Concord Hotel)

Sunday, 19 July.

08.00 - 09.00 hrs	-	- Joint meeting with AFNETA teams: - Imo/Abia State Agric. Dev. Project - M. Okpara College of Agric. (preliminary presentations)
09.30 hrs	-	Field Visits - Imo/Abia ADP - M. Okpara coll. of Agric

12.00 hrs	-	Wrap-up discussions
13.00 hrs	-	LUNCH
14.00 hrs	-	Depart for Port Harcourt
17.00 hrs	-	Depart Port Harcourt for Cotonou, Benin

APPENDIX 1A

Program of visit of AFNETA Evaluation Team to Republic of Benin, 19-22 July, 1992.

Sunday 19 July	Arrival in Cotonou by IITA plane. Time : 14.00 hrs approx
Monday 20 July	COTONOU, DAY I
08.00 hrs	Meeting with Director of DRA
09.00 hrs	Meeting with Chairman of AFNETA Steering Committee and members of AFNETA Team. (Preliminary presentations of projects)
10.30 hrs	Field visit - L'unite de Recherche Zootechnique et Veterinaire
11.30 hrs	Field visit - IITA - Cotonou
12.30 hrs	Lunch (IITA Station)
13.30 hrs	Depart for Niaouli Station Field visits - AFNETA projects Station de Recherche sur les Cultures Vivrieres L'unite de Recherche Forestieres
17.30 hrs	Return to Cotonou
Tuesday 21 July	COTONOU DAY II
08.30 hrs	Depart for Mono Province
10.00 hrs	Visit RAMR/AFNETA On-farm Alley Farming Project (Rechèrche Appliquée en Milieu Réel-RAMR)
13.00 hrs	Lunch
15.30 hrs	Arrive back in Cotonou
17.00 hrs	Courtesy call on Minister for Scientific Research
19.00 hrs	Cocktail
Wednesday 22 July	COTONOU DAY III
07.00 hrs	Breakfast Meeting (consultants only)
09.30 hrs	Discussions on institutional and financial management issues
11.00 hrs	Synthesis and Wrap-up Meeting with DRA and AFNETA project staff
12.00 hrs	Lunch
13.30 hrs	END OF VISIT DEPART FOR ACCRA

APPENDIX 1B

Ghana, 22 July, 1992.

Wednesday 22 July	Arrival in Accra (Immigration formalities) Proceed to Kumasi (ETA : 16.30 hrs)
Thursday 23 July	DAY I
08.00 hrs	Meet Director, Institute of Renewable natural Resources (IRNR)
08.45 hrs	Meet Director, Forest research Institute of Ghana (FORIG)
09.30 hrs	Meet AFNETA Project Staff IRNR/FORIG (Preliminary presentation)
10.30 hrs	Field Visits IRNR Farm
12.30 hrs	Lunch
14.00 hrs	Depart Kumasi for Asempaneye Field Visits, IRNR/FORIG trials Asempaneye
17.30 hrs	Return to Kumasi.
Friday 24 July	
07.00 hrs	Breakfast meeting (consultants only)
09.30 hrs	Synthesis/Wrap-up meeting with FORIG/IRNR
11.00 hrs	END OF KUMASI MISSION Depart for Tamale
14.00 hrs	Arrive Tamale, visit Nyankpala Agricultural Experiment Station Meet Director of (NAES) and AFNETA collaborators Field visit - (NAES experimental farm) Agroforestr Project. MOA.
Saturday 25 July	
07.30 hrs	Depart Tamale for Bawku (by road)
11.30 hrs	Arrive Bawku
12.00 hrs	Lunch
13.30 hrs	Field visits FORIG/AFNETA trial
16.30 hrs	Depart Bawku for Bolga (night at Bolga)
Sunday 26 July	
09.00 hrs	Depart Bolga for Tamale
13.00 hrs	Arrive Tamale Lunch
14.30 hrs	Depart Tamale for Accra (by air)
Monday 27 July	
08.30 hrs	Meet Director, Crop Services Dept. and officers of National Agroforestry project.
11.00 hrs	Depart for Yensi to visit NGO alley farming project with farmers.
17.00 hrs	Return to Accra.
Tuesday, 28 July	
a.m.	Free
11.00 hrs	Depart for Cote d'Ivoire (Bouke)

APPENDIX 1C

Program of visit of AFNETA Evaluation team to Cote d'Ivoire, 28-31 July, 1992.

Tuesday, 28 July	
p.m.	Arrive Bouake from Accra
Wednesday 29 July	
08.00 hrs	Meet Director, IDESSA
09.00 hrs	Meet AFNETA project team (preliminary presentations)
10.30 hrs	Field visit IDESSA station AFNETA/Doumbia trials
13.00 hrs	Lunch
14.30 hrs	Field visit IDESSA station AFNETA/Aman trials
17.00 hrs	Depart Bouake for Dabakala (night at Dabakala)
Thursday 30 July	
08.30-12.00 hrs	Field visit : On-farm experimental trials at Ngola and Djenguesso
12.00	Depart for Katiola Lunch at Katiola
13.00	Depart for Bouake
15.00	Arrive Bouake
15.00-17.30 hrs	Free for consultants' consultation
Friday 31 July	
0800-09.30 hrs	Discussion fo phase II plans
9.30 hrs	Synthesis/ Wrap-up meeting
12.00 hrs	Lunch
13.30	Depart for Abidjan (night at Abidjan)
Saturday 01 August	
09.30	Depart Abidjan for Cameroon.

TENTATIVE PROGRAMME FOR AFNETA EVALUATION MISSION

CAMEROON

DAY	DATE	HOUR	ACTIVITIES
Friday	July 31st	17:00	Arrival of the team from ~~Abidjan~~. Côte d'Ivoire. ~~Accommodation at Hilton Hotel~~ Overnight in Douala
Saturday	August 1st	~~14:00~~	~~Meeting with IRA/IRZ Projects Leaders~~.
			~~Presentation of IRA/AFNETA and IRZ/AFNETA 1st phase.~~
		15:00	Travel from Douala to Yaounde
			~~Closing~~ Overnight in Yaounde, Hilton Hotel.
Sunday	August 2nd	7:15 ~~08:00~~	Visit IRA/AFNETA on-station trials.
		10:00	Visit IRZ/AFNETA on-station trials.
		11:00	Courtesy call to the Honourable Minister of Scientific Research.
		12:00	Closing
Monday	August 3rd	07:00	Visit IRA/ICRAF/NCRE on-farm trials
		12:00	Lunch
		13:00	Visit IRA/AFNETA on-farm trials
		17:00	Closing
Tuesday	August 4th	08:00	Presentation IRA/AFNETA 2nd phase
		09:00	Presentation IRZ/AFNETA 2nd phase.
		10:00	General discussion
		11:30	Final discussion with Honourable Minister
		12:00	Visit to IITA Mbalmayo Station
		20:00	Closing Diner
Wednesd.	August 5th	9:00 - 12:00	Consultant's discussion
		~~08:00~~ 16:00	Departure

KENYA

KEFRI. Muguga

Thursday, 23 July 1992 DAY 1

10.00 hrs	Arrival in Nairobi ET 930 Dr. Nyamai and P. Ongugo to meet team at the airport Convey team to Hilton Hotel
11.00 - 11.30 hrs	Leave Hilton Hotel for KERFI
11.30 - 12.30 hrs	Meeting with Director of KEFRI - Dr. Odera
12.30 - 13.30 hrs	Lunch (Muguga)
13.30 - 14.30 hrs	Brief presentation of the AFNETA project and discussion
14.30 - 15.00 hrs	Departure for ICRAF
15.00 - 17.00 hrs	ICRAF visit. ICRAF involvement in AFNETA (Dr. P. Sanchez, Mr. B. Scott and Dr. E. Zulberti)

Friday, 24 July 1992 DAY 2

08.30 hrs	Leave hotel for Muguga
09.30 - 10.30 hrs	Field visit. On- station research activities at KEFRI
10.30 - 11.00 hrs	Coffee break
11.00 - 12.30 hrs	On-station experiment continues at KARI
12.30 - 13.30 hrs	Lunch (Muguga)
13.30 - 18.00 hrs	On-farm visit
19.00 hrs	Cocktail

Saturday, 25 July 1992 DAY 3

08.30 hrs	Leave Hotel
09.30 - 10.30 hrs	Presentation and discussion on second phase proposal by KEFRI
10.30 - 11.00 hrs	Tea break
11.00 - 12.00 hrs	Wrap-up meeting with Director KEFRI and AFNETA team
12.00 - 13.00 hrs	Lunch
Afternoon	Free. Nairobi National Park visit

Sunday, 26 July 1992	**DAY 4**
07.45 hrs	Depart hotel for airport to Mombassa
MOMBASSA	KARI/ILCA, Mtwapa
Sunday, 26 July	**DAY 1**
9.00 hrs	Arrive Mombassa - AFNETA team leader to meet the evaluation team
14.00 - 17.00 hrs	Meeting with AFNETA Team -Presentation of phase I and II projects
Monday, 27 July 1992	**DAY 2**
8.30 - 9.00 hrs	Meeting with the Director, KARI Mtwapa
09.00 - 10.00 hrs	Meet with ILCA Team - Dr. Thorpe, Dr. L. Reynold
10.00 - 10.30 hrs	Coffee break
10.30 - 12.30 hrs	Field visit. On-station research activities
12.30 - 14.00 hrs	Lunch break
14.00 - 18.00 hrs	Field visit. On-farm research activities
Tuesday, 28 July 1992	**DAY 3**
07.30 - 8.00 hrs	Brief wrap-up meeting with AFNETA team
08.30 hrs	Depart to airport
09.30 hrs	Depart for Uganda

UGANDA, Makerere University

Tuesday, 28 July 1992	**DAY 1**
13.15 hrs	Arrival at Entebbe QU 321 - Dr. J. Aluma to meet evaluation team
16.00 - 18.00 hrs	Meeting with the AFNETA team. Presentation of the on-going project and discussion.
Wednesday, 29 July 1992	**DAY 2**
9.00 - 9.30 hrs	Meeting with Dean of Faculty of Agriculture
9.30 - 12.00 hrs	Departure to Kabanyolo. Field visit. On-Station research activities.
12.00 - 13.00 hrs	Lunch
13.00 - 17.30 hrs	Departure to Namulonge Field visit. On-Station research activities
17.30 - 18.00 hrs	Return to Kampala
Thursday 30 July 1992	**DAY 3**
8.30 - 12.30 hrs	Visit on-farm experiment CARE & extension project
12.30 - 13. 30 hrs	Lunch
13.30 - 18.00 hrs	Continue on-farm visit
08.30 - 09.30 hrs	Presentation of 2nd phase proposal and discussion
09.30 - 10.30 hrs	Wrap-up
10.30 - 11.00 hrs	Tea break
11.00 - 12.00 hrs	Discussion continues
12.00 - 13.00 hrs	Lunch
13.00 hrs	Departure to Entebbe
15.45 hrs	Departure to Nairobi KQ 415

MALAWI

Friday, 7 July 1992

21.25 hrs	Arrival at Lilongwe. Dr. Moses Kwapata to meet evaluation team

BUNDA COLLEGE

Saturday, 1 August 1992 DAY 1

9.00 - 10.00 hrs	Bunda College team. Presentation of phase I research activities
10.00 - 10.30 hrs	Coffee break
10.30 - 12.30 hrs	Field visit : On-station experiment
13.00 hrs	Return to Lilongwe Hotel Lunch
Afternoon	Free

Sunday, 2 August 1992 DAY 2
Free

Monday, 3 August 1992 DAY 3

9.00 - 9.30 hrs	Discussion with Vice Principal of Bunda College
9.30 - 10.00 hrs	Tea break
10.00 - 12.00 hrs	Presentation of second phase research proposal and discussion
	Wrap-up session
12.00 - 14.00 hrs	Lunch
14.00 - 17.00 hrs	Visit Chitezi station - ICRAF/AFRENA and EARSN IITA

TOBACCO RESEARCH AUTHORITY

Tuesday, 4 August 1992 DAY 4

9.00 - 9.30 hrs	Meeting with General Manager
9.30 - 10.30 hrs	Presentation of phase I project
10.30 - 11.00 hrs	Coffee break
11.00 - 12.30 hrs.	Field visit on-station
12.30 - 14.00 hrs	Lunch break
14.00 - 16.00 hrs	Second phase proposal presentation

Wednesday, 5 August 1992 DAY 5

9.00 - 10.00 hrs	Wrap-up with Tobacco Research and Bunda College AFNETA team at Tobacco Research Authority
10.00 - 11.00 hrs	Visit EARCSN - and AFRENA/ICRAF
12.45 hrs	Depart KQ 421

APPENDIX (8)

	MAP	Convention ACDI-CRDI	MGC CRDI-IITA
	(1)	(2)	(3)
• Finalité du projet/ objectif principal	Améliorer, au profit des populations des zones tropicales, les capacités biophysiques et humaines de production agricole dans le meilleur respect des conditions du milieu	Mettre sur pied et soutenir financièrement pendant 5 ans le réseau de recherche sur l'agriculture en couloirs.	The overall objective of the research project is to support the Alley Farming Network for Tropical Africa (AFNETA), established to promote alley farming research and the on-farm testing, use and extension of the concept across diverse environments in tropical Africa.
• Objectifs particuliers	-	Les objectifs particuliers du réseau sont d'aider les responsables des programmes de recherche nationaux et internationaux à réaliser des recherches en station et dans les fermes.	Specific objectives are to assist African national and international research program to conduct on station and on farm research.
• But	Développer et promouvoir une alternative valable à la culture itinérante.	Offrir une alternative valable à la culture itinérante.	-

	MAP	Convention ACDI-CRDI	MGC CRDI-IITA
	(1)	(2)	(3)
• Cadre logique inclus	Oui	Non	Non
• Résultats attendus	Oui	Non	Non
• Budget total projet (1 000 $ can.)			
- ACDI	4700	4346	4060**
- CRDI	250	250	50
	4950	4596	4110
- Administration CRDI	*	*	135
TOTAL	4950	4596	4240
• Moyens d'atteindre les objectifs	Mise sur pied d'un réseau de recherches sur l'agriculture en couloirs de manière à favoriser l'approfondissement des connaissances relatives à ce mode de production agricole et en faciliter la diffusion.	-	-

* Incluse dans ACDI
** Incluant 200.000 $ du CRDI

	MAP (1)	Convention ACDI-CRDI (2)	MGC CRDI-IITA (3)
• Volets d'intervention	détaillés • Recherche et développement • promotion auprès des systèmes nationaux et autres agences internationales de recherche agricole • Formation et vulgarisation	Succincts • Recherche en station • Recherche dans les fermes • Formation-Vulgarisation	Succints Idem (2)
• Structure organisationnelle du réseau	• Comité exécutif • Unité de coordination • Sous-comités de recherché (sous responsabilité directe du coordonnateur)	• Comité directeur (très détaillé) • Unité de coordination • Sous-comités de recherche • Sous-comité d'examen des projets nationaux (membres du comité directeur)	• Idem (peu detaillé) • Idem (aucune fonction décrite).
• Suivi des projets de recherche	Par les huit membres du comité exécutif	Effectué particulièrement sous les auspices des sous-comités de recherche at autorisé par comité directeur	By Steering Committee members and Network Collaborators following a well defined program approved by the Steering Committee.

APPENDIX (9)

Annexe 9

Projet de Soutien au Réseau de Recherche Collaborative en Afrique Tropicale
Présenté par IITA/ILCA
19/09/1987

EXTRAITS (*)

Page	G	
7	13	"La méthode d'agriculture en couloirs décrite ci-dessous **peut être modifiée** dans ses différentes étapes **en fonction des conditions locales, qu'elles soient écologiques,économiquesetsociales.**
8	14	"L'agriculture en couloirs **doit être modifiée** en fonction de la culture ou des pratiques culturales associées."
9	15	"En Afrique tropicale, le climat, les conditions pédologiques et les pratiques culturales varient fortement d'une région ou d'un pays à l'autre. Chaque pays devra dès lors **définir le cadre des recherches en fonction de ses propres besoins.**"
9	16	... "la recherche pluridisciplinaire doit bénéficier des ressources et de l'assistance des institutions nationales et internationales d'études agronomiques, y compris les universités et les **services de vulgarisation** "
13	25	[la recherche en milieu réel est ici abondamment décrite, occupant presque autant de place que la recherche en station. On y souligne l'importance de l'étude du diagnostic des communautés et **systèmes de production, utilité et acceptabilité de la technologie, problèmes économiques et structurels influant sur le rendement des investissements ainsi que les risques associés** au système d'agriculture en couloirs et pratiques forestières apparentées.]

14 27 "Les activités de recherche en milieu réel impliqueront des études exploratoires et des **essais gérés par les scientifiques et les agriculteurs**. Puisque l'occasion se présente, les **vulgarisateurs locaux** devraient intervenir à ce niveau de sorte à pouvoir s'initier à l'agriculture en couloirs et, avec l'aide des paysans, en tirer tous les avantages."

15 30 [Parmi les résultats escomptés au terme des 5 premières année figure] "on aura etabli, dans certains sites, des projets de recherche en milieu réel permettant **d'évaluer l'efficacité et l'acceptabilité du système d'agriculture en couloirs géré par les paysans**."

17 32 "Priorités : la recherche sur l'agriculture en couloirs est axée sur les petites exploitations. Afin d'atteindre les objectifs escomptés, le programme de recherche du réseau **doit** dans un premier temps **accorder la** priorité aux points suivants :

- description des **conditions et contraintes sociales et physiques existantes**
- **examen des connaissances acquises**
- **planification de la recherche après l'identification des problèmes**
- échange d'information
- essais portant sur les espèces ligneuses **indigènes** et exotiques
- choix de methodologies communes à adopter par les sous-Comités de recherche."

27 d. [Fonctionnement du réseau de recherche sur l'agriculture en couloirs pour l'Afrique tropicale - Sous-Comités de recherche - en termes d'activités prévues, le sous-Comité de recherche sur les systèmes de production est le plus imposant].

(*) N.B. Il est intéressant de comparer les parties en caractère gras (établies par nous) des extraits précédents avec les recommandations et conclusions de la mission.

APPENDIX (10)

APPENDIX 10 : Members of the Ad-Hoc Steering Committee elected during the Alley Farming workshop held in Ibadan, Nigeria on March 10-14, 1986

	Name	Country
1.	NARS	
	Prof E.O. Asare (Chairman)	Ghana
	Dr A. Koglevi	Benin
	Dr J. Tonye	Cameroon
	Mr S.A. Matacheera	Malawi
	Dr G.E. Okoro	Nigeria
	Dr Denis Amara	Sierra Leone
	Dr L.L. Lulandaia	Tanzania
	Mr B. Landu-Kolemba	Zaïre
2.	IARCs Representatives	
	Dr L. Reynolds	ILCA
	Dr D. Spencer	IITA
	Dr B. Scott	ICRAF

APPENDIX (11)

TRAINING COURSES CONDUCTED IN COLLABORATION WITH AFNETA SINCE 1990

1990: Alley Farming for Tropical Africa (AFNETA) Training Course
12-30 March, 1990.
20 participants from 5 countries in West and Central Africa

1991: Regional alley Farming Course conducted at Bas-Zaire
18-29 March, 1991
18 participants from 10 countries in East and Central Africa

1991: AFNETA Workshop in On-farm and Social Science Research and Strategies for Alley Farming
8-19 April, 1991
20 participants from 10 African countries

1992: AFNETA Training of Trainers Workshop
13-14 April, 1992
15 participants from 4 countries

1992: Alley Farming Training Course in Benin Republic
13-24 July, 1992

Upcoming: Alley Farming Training Course in Ghana
10-21 August, 1992.

Group Training at IITA Ibadan/Cotonou
Courses, Country and Participants: Cumulative 1972 - 1991

	Course Titles and Countries	Period	No. Part.	No. Male	No. of Female	No. of Countries
73.	Alley Croping Course	85/4/22-85/5/3	24	22	2	10
91.	Alley Cropp. &Alley Farm.	86/5/5-86/5/21	34	34	0	17
108.	Alley Cropp. & Alley Farm.	87/4/13-87/4/24	43	40	3	19
124.	Alley Farming	88/3/14-88/3/25	33	31	2	11
147.	Alley Farming	89/8/8-89/8/18	35	32	3	18
152.	Alley Farming	90/3/12-90/3/30	20	20	0	5
166.	Alley farming	91/4/8-91/4/19	20	17	3	9
1.	Angola		01	00	1	
2.	Bénin		13	12	1	
3.	Burundi		1	1	0	
4.	Cameroûn		4	3	1	
5.	Congo		1	1	0	
6.	Côte d'Ivoire		3	3	0	
7.	Ethiopia		2	2	0	
8.	Gabon		1	1	0	
9.	Gambia		2	1	1	
10.	Ghana		13	12	1	
11.	Guinea Bissau		4	4	0	
12.	Kenya		11	10	1	
13.	Liberia		4	4	0	
14.	Madagascar		3	3	0	
15.	Malawi		2	2	0	
16.	Mali		3	3	0	
17.	Nigeria		59	57	2	
18.	Rwanda		4	4	0	
19.	Sénégal		3	3	0	
20.	Sierra-Leone		6	6	0	
21.	Somalia		4	4	0	
22.	Sudan		1	1	0	
23.	Swaziland		1	1	0	
24.	Tanzania		6	4	2	
25.	Tchad		1	1	0	
26.	Togo		12	12	0	
27.	Uganda		3	2	1	
28.	Zaïre		14	14	0	
29.	Zambia		2	2	0	
30.	Zimbabawe		2	2	0	
	Subtotal Africa		186	175	11	
1.	Germany		2	0	2	
2.	Haiti		5	5	0	
3.	India		1	1	0	
4.	Indonesia		4	4	0	
5.	Nepal		2	2	0	
6.	Netherlands		1	1	0	
7.	Norway		1	1	0	
8.	Philippines		1	1	0	
9.	Sri Lanka		4	4	0	
10.	USA		2	2	0	
All	Alley Croping 1985 - '91 (7)		209	196	13 = 6.2%	

	Course Titles and Countries	Period	No. Part.	No. Male	No. of Female	No. of Countries
72.	Agro-Forestry Workshop	85/3/7-85/3/8	18	18	0	4
	Nigeria		15	15	0	
	Canada		1	1	0	
	USA		1	1	0	
	Netherlands		1	1	0	
	Agro-Forestry Workshop 1985		18	18	0 = 0%	

APPENDIX (12)

AFNETA RESEARCH PROPOSAL TO IFAD:

Phasing of Experiments in National Institutions

Country/Institution 1990 1991 1992

REP. OF BENIN

L'Unite de Recherche Forestiens
Expt. I.

L'Unite de Recherche Zootechnique
Expt. 1
Expt. 2
Expt. 3

Station des Recherches sur les Cultures Vivrieres
Expt. I

BURKINA FASO

L'Institut de Recherche (IRBET)
Expt. I
Expt. 2

CAMEROON

L'Institut Recherche Agronomique
Expt. I
Expt. 2
Expt. 3

Institut Recherches Zootechnique
Expt. I
Expt. 2

LIBERIA 1990 1991 1992

Central Agric. Res. Institute
Ex.pt. I

Expt 2

MALAWI

Tobacco Research Authority

Expt. I

Expt. 2

DEVELOPMENTAL OFR

NIGERIA

University of Ibadan
(Agronomy Dept)

Expt. I Site I

Expt. I Site I I

Univ. of Ibadan (Botany Dept.)

Expt. I

Expt. 2

Rivers State Univ.

Expt. I

Expt. 2

Expt. 3

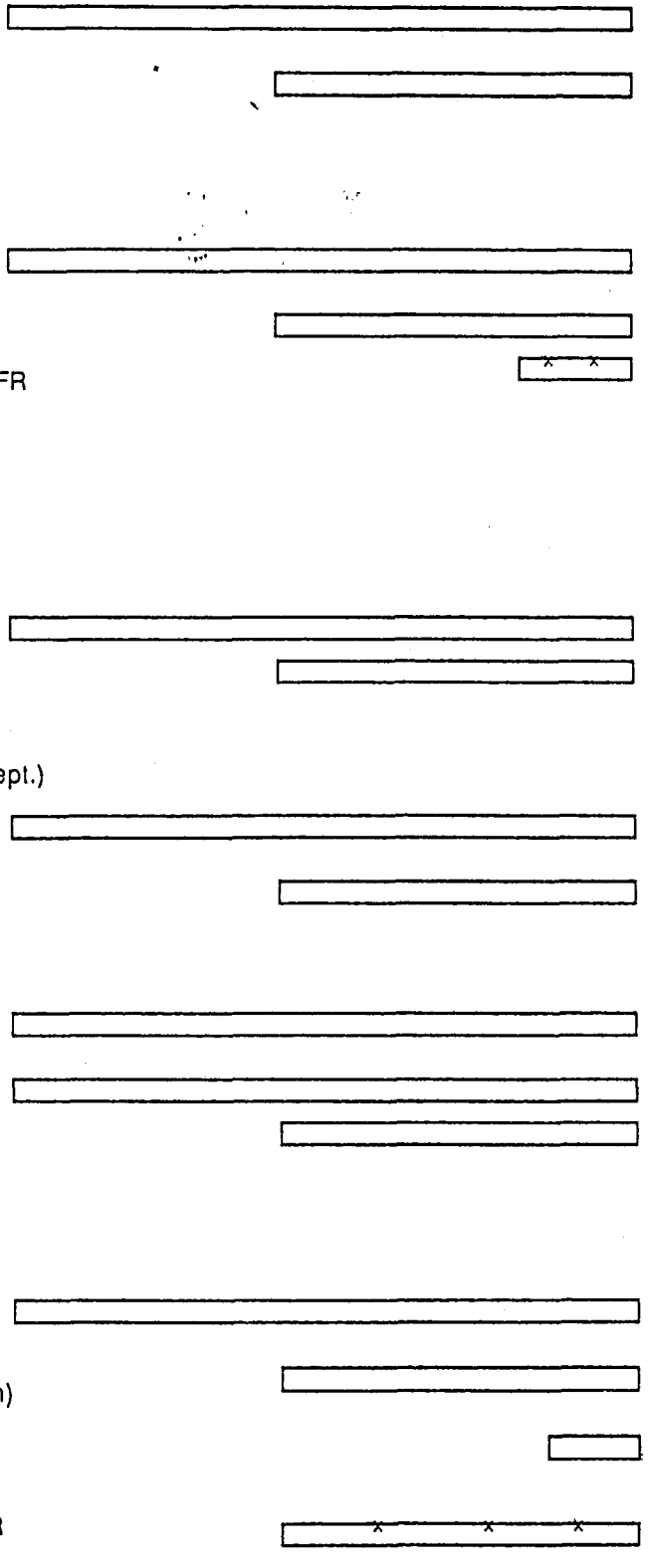
Imo Agric. Dev. Project

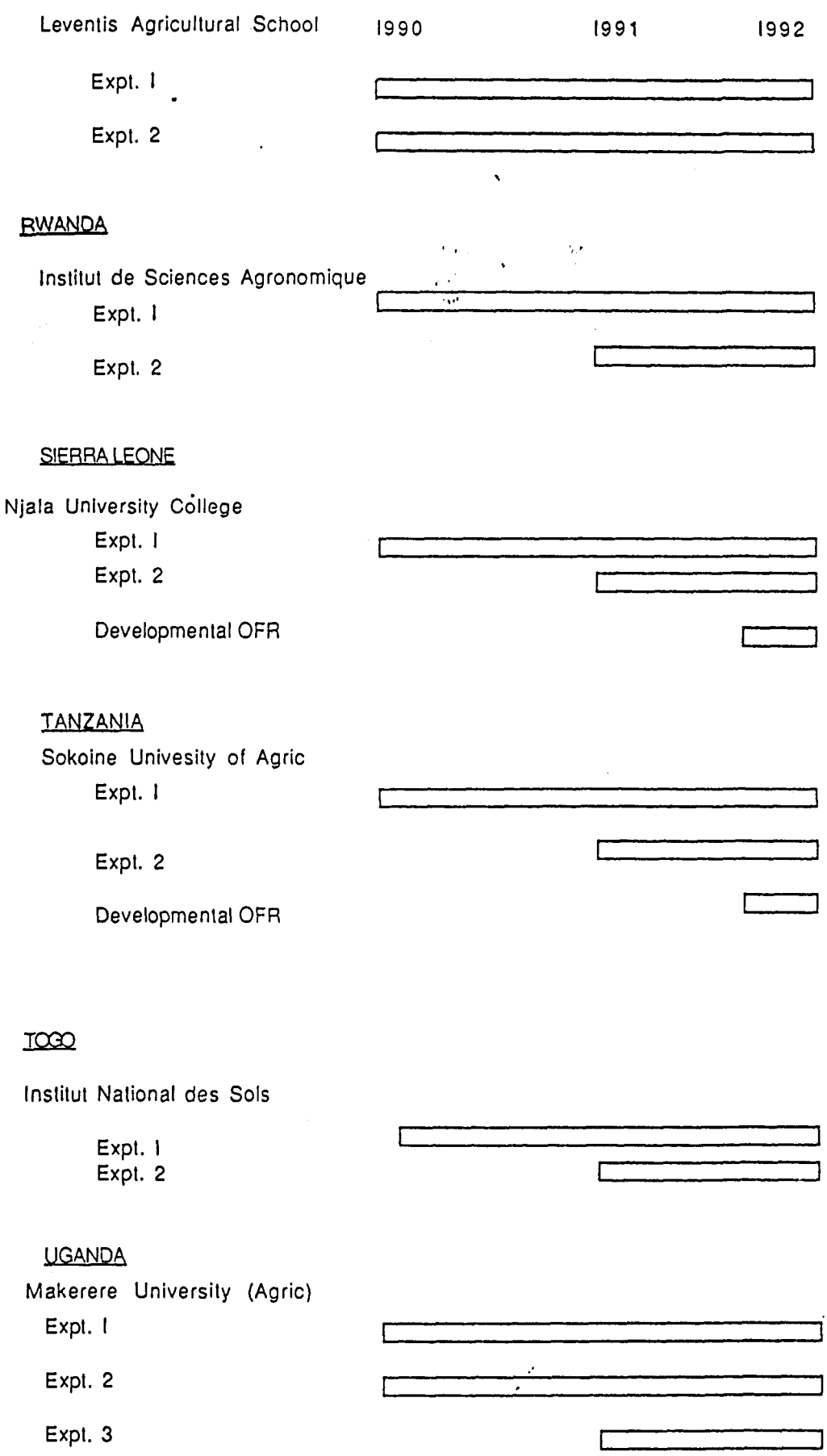
Expt. I

Expt. II (on-statoin)

Expt. II (on-farm)

Developmental OFR




Leventis Agricultural School
1990
1991
1992
Expt. 1
Expt. 2
RWANDA
Institut de Sciences Agronomique
Expt. 1
Expt. 2
SIERRA LEONE
Njala University College
Expt. 1
Expt. 2
Developmental OFR
TANZANIA
Sokoine Univesity of Agric
Expt. 1
Expt. 2
Developmental OFR
TOGO
Institut National des Sols
Expt. 1
Expt. 2
UGANDA
Makerere University (Agric)
Expt. 1
Expt. 2
Expt. 3

COTE D'IVOIRE 1990 1991 1992

Institute des Savannes

Expt.

Expt. 2

Expt. 3

ETHIOPIAN

Alemaya University

Expt. I Site I

Expt. I Site II

Expt. I Site III

Expt. 2 Sites I&II

Expt. 2 Site

GHANA

Institute Renewable Nat. Resources

Expt. 1

Expt. 2

DEV. OFR. x x x x

Forest Pdcts. Res. Institute

Expt. I

Expt. 2

GUINEA

Direction Recherche Agronomique (DNRA)

Expt. I

Expt. 2

1991 1992

ZAMBIA

Min. of Agric (Research Dept)

Expt. 1

Expt. 2

Developmental OFR

Zaire

Programme National Legumineuses (PNL/RAV)

Expt. 1

Expt. 2

Developmental OFR.

Programme National du Manioc (PRONAM/RAV

Expt. 1 Site 1

Expt. 1 Site 2

Developmental OFR

APPENDIX (13)

ANNEX

This Annex is a supplement to the reference made in section 6.1.2, to the emphasis placed by IFAD and indeed fully endorsed and strongly recommended by the Evaluation mission, on the need for linking the research with extension efforts. This annex discusses some of the linkags that have been established so far and also suggests other examples where it might seem important to establish a meaningful linkage. It is stated by the mission that in may instances, given the potential of the Alley farming system lies in specific niches, it may become necessary to identify new IFAD-financed investment initiatives with the AF technolgy as the technical basis for those interventions. Proposals for Better integration of IFADS alley farming Research Programme funded on behalf of AFNETA and on going· projects in countries concerned have been made by IFAd supervision missions previously. This annotation builds further on the earlier information.

Benin

Forestry Research Unit (Mme Yacoubou) - Trials on selecting MPTs for different agro-climaticb and agro-ecological zones of Benin. Two special sites: sub-humid zone at Nioe, and a semi-arid site 50km inland.

Possible links with following IFAD projects

1. Atacora Province RDP, 1982-90 (IFAD/IDA - 101 BE). A general RDP based on food crops, cotton and livestock in N.W. Benin due to close in December 1990. Project has had a major extension input, and a trial and demonstration unit with 3 research sited and 80 on-farm trial sites.

2. Bourgou Province RDP, 1987-92 (IFAD/IDA - 210 BE).
Similar Project to above but in north East Benin, has two more years to run.

Good relations and very close collaboration exists between the Research Institution and the RAMR Project AF trials. It would appear feasible to introduce an AF component into the Bourgou Project, which has a year to run, before all recurrent funding needs will devolve on the implementating CARDER Bourgou, the organisation responsible for agricultural development at Provincial level.

Cote d'Ivoire

Instiut des Savannes, IDESSA (Dr. S. Doumbia) - studying different MPT's and varying spacing in AF trials. Bimodal rainfall area, low population density and a labour problem with AF - conduction trials in Savannah Zone around Katiola.

Possible links with following IFAD projects

1. Dabakala/Katiola Rural Development Project, 1987-93 (IFAD/IDA - 189 IC). This RDP has crop and livestock components, and receives research support from IDESSA. It covers the area, where IDESSA AF trials (in 1 above) are ongoing.

Since the Dabakala/Katiola Projects are in the same area as ongoing IDESSA AF trials it is and ideal cadidate to closely collaborate with IDESSA in expanded trials and dissemination of AF technologies, as will also be the new north East RDP. AF trials in the forest zone will need to link up with other donor projects in the area.

Ethiopia

1. Fourth Livestock Development Project, 1983-91 (IFAD/IDA-131 ET). This is a national project to improve animal health and nutrition, improve soil conservation, protect grazing ares and develop land use plans for integrated farming systems, review and improve institutional and marketing aspects of the livestock sector. It includes research, extension and training components. Any AFNETA trial in the country is bound to have an intrinsic link with this national project. This potential needs to be further explored.

Ghana

Institute of Renewable Natural Resources, Kumasi University (Dr. Quarshie-Sam)
Trials on MPTs, exotic and local, in Af being carried out in both forest zone at University, and in derived savannah zone 80 km to northwest, A second set of trials comparing small ruminants production in various AF cropping/fallow systems with varying proportions of prunings for mulch or fodder. Investigating socio-economic and gender issues.

1. Smallholder Rehabilitation and Development Programme, 1986-92 (IFAD-UNDP-128 GH). A smallholder project in Northern Ghana with a root and tuber crop and livestock farming system economy with a major research support component on roots and tubers.

Kumasi University trials will probably need to work with other donor projects closer than the IFAD one. However, an NGO is working on AF in Northern Ghana that could collaborate with the IFAD Project, and exchange information with Kumasi University through the national AFRENA Coordinating committee, which has been given the mandate to also coordinate all Alley-Farming activities. A cassava component in the project is being executed by IITA and the project staff has informed the mission that an agroforestry component is envisaged in the project which may well involve an alley farming adaptive research effort to validate the technology among IFAD target groups.

Malawi

1. Dowa West Agricultural Development Project, 1981-91 (IFAD/IDA-070 MW) - part of first phase of Malawi's national Rural Development programme, NRDP, located in central Malawi only 5 km north of Lilongwe. A maize, groudnut, bean farming system with flue-cured tobacco as the major cash crop found on 75% of farms. Includes a food crop/vegetable research component. It also has a major livestock component, including stallfeeder and dairy cattle.

2. Kasungu Agricultural Development Project, 1984-91 (IFAD/IDA-158 MW). Very similar type of project to Dowa West - mixed crop and livestock, and tobacco as main cas crop.

The Tobacco Research Institute trials under AFNETA are being planned in 1993 to shift venue to the Kasungu ADP, directly under the project area.

Nigeria

1. Imo State Agricultural Development Proect (Dr. E. Okoro) - forest zone. Three trials: one assessing Acioa and Flemingia MPTs in AF, examining soil erosion control and effects on crop yield; Acioa AF on acid low fertility soils, levels of mulching, continuous cropping v. fallows; developing OFR trials to assess farmer reaction to AF, farmers selected this year. More emphasis on socio-economic and gender issues in future.

IFAD Projects

Imo/Abia State

1. Multistate Agricultural Development Project, 1985-92 (IFAD/IBRD-177 NR) - multifaceted crop/livestock development project with full range of support services covering 12 states.

2. Katsina State Agricultural and Community Development Project 1991 - (forthcoming). Emphasis on controlling soil erosion and land degradation, with good opportunity for AF as dense population, commercialized economy, and large private land ownership, even fencing in and subdividing degraded communal grazing areas for allocation on individual basis to landless livestock ownwers.

AFNETA project in the two states are directly involved in the IFAD project area. Project staff are serving on both, the research and investment project. However, the experiments are still very OSR oriented and an effort needs to be made to encourage testing with farmers who would naturally fall under the ADP project.

Sierra Leone

1. Institute of Agricultural Research, Njala University college, (Dr. Amara) - Main focus of AF Research in upland areas with shortened bush fallows, reduced fertility and weed infestation. Both on-station and on-farm Af trials - but no details available since IFAD suspended loan operations in the country. However, Director of the National Agricultural Research Institute, AFNETA Evaluation Mision member, states that the Magbosi project may be revived soon and would present possibilities for collaboration.

Togo

1. Small ruminants Project, 1987-94 (IFAD/IDA -122 TO) - This project involves animal health and husbandry activities for traditional sheep and goat keeping throughout the country with special emphasis on the Savannah Zone, whose modern sheep farms will be promoted. With available grazing being at a premium there is scope for AF technology. A special research is being carried out at Kolokopw Research Station with emphasis on supplementary feeding.

Uganda

1. Makerere University (Dr. J.R. Aluma) - Trials proposed for Lakeshore region of Uganda where there is shortage of both fuelwood and fodder. Screening MPTs at present, before laying out AF trials at Namulaye Research Station near University farm.

There is a strong possibility for colaboration with the new project in the Kumi and Soroti districts where a new NARO station, with an agroforestry mandate, is currently being established through IDA financing.

Kenya

1. Mtwapa Agricultural Research Station, Coast Province, Kenya (Dr. J. Mureithi). Trials in a coconut/cashew/cassava farm system with dairy cattle. Two trials: one growing napier grass for fodder in leucaena alleys; and one growing maize and cowpeas as intercrops also in leucaena alleys. Looking at interaction with varying prunings as livestock feed or mulch.

2. National extension Projct, 1983-90 (IFAD/IDA-132 KE). Project to introduce an adapted form of training and visit extension in many regions of Kenya including all the highlands.

3. Kwale and Kilifi District Development Project, 1989-95 (IFAD/IDA-238 KE). A multifaceted crop/livestock and support services project in southern coastal areas of Kenya.

The two coast projects can be proving grounds for the AF trials work ongoing work at the Mtwapa Agricultural Research Station. The Regional Director of KARI is Project Task Force member in the Kwale Kilifi region. However, he states that initiative from IFAD headquarters is essential before a concrete working link can be established.

Zimbabwe

1. National Agricultural Research and Extension Project, 1983-91 (IFAD/IDA-123 ZI). This project is strengthening national research and extension throughout the country, covering all smallholder farming areas.

The research and extension project, which should be extended into another phase, is a clear example where collaboration with AF research can be useful.

APPENDIX (14)

Annex 14

Establishment of protocol experiments in the sample of countries visited by the evaluation mission

Country	Agency	Protocol Experiment	Established Yes/No	On Station/ On Farm
Benin	URF	Screening of multipurpose trees at two locations	Yes	On station
Benin	URZV	Productivity of grass and tree fodder in an alley system	Yes	On station
Benin	URZV	Effects of Leucaena mulch on grass productivity and quality in alley farming	Yes	On station
Benin	URZV	Palatability and digestibility of tree fodder and tree fodder/grass mixtures	Yes	On station
Benin	SRCV	Screening of MPT's	Yes	On station
Benin	SRCV	Effect of K-fertilization on maize yield in an alley system	Yes	On station
Benin	SRCV	Development OFR for introduction of alley farming	No	On farm
Cameroon	IRA	Effect of spacing and tree biomass production on soil productivity and crop yield	Yes	On station
Cameroon	IRA	On farm study of alley cropping under a maize/groundnut intercrop system	Yes	On farm
Cameroon	IRA	Fallow management in alley farming with crop considerations	Yes	On station
Cameroon	IRA	Fallow management with livestock considerations	No	On station
Cameroon	IRZ	Integration of trees into grass fields and effects upon grass productivity and quality	Yes Incorrect	On station
Cameroon	IRZ	Effect of supplementing goat diet with tree prunings	No	On station
Cote D'Ivoire	IDESSA	Screening of MPT's and intrarow spacing trials	Yes Incorrect	On station
Cote D'Ivoire	IDESSA	Comparison of alley farming and traditional farming	Yes	On station
Cote D'Ivoire	IDESSA	On farm alley farming with Leucaena in a maize/cotton/ groundnut rotation	Yes	On farm Researcher Managed
Ghana	IRNR	MPT screening	Yes	On station
Ghana	IRNR	Fallow management in alley farming with crop considerations	Yes	On station
Ghana	IRNR	Fallow management in alley farming with livestock considerations	No	On station
Ghana	IRNR	Developmental OFR for introduction of alley farming	No	On farm
Ghana	FPRI	MPT screening	Yes	On station
Ghana	FPRI	Contribution of alley farming to soil fertility Maintenance and sustainability	Yes	On station
Kenya	KEFRI	Effects of mulch applications in an alley farming system for soil fertility management and livestock feed	Yes	On station

Kenya	KARI/ILCA	Fodder production based on Pennisetum purpureum and Leucaena leucocephala	Yes	On station
Kenya	KARI/ILCA	Maize production in a Leucaena alley farming system	Yes	On station
Malawi	TRIM	Interow spacing and utility of Leaucauna in an alley system to produce maize, groundnuts and tobacco by rotation	Yes	On station
Malawi	TRIM	As above but with fertilizers	Yes	On station
Malawi	TRIM	Utility of alley farming for maize-groundnut-fallow production with an additional fallow	Yes	On station
Malawi	Bunda College	Evaluate the performance of Leucaena and Pigeon pea hedgerows for food legume production	Yes	On station
Malawi	Bunda College	Screening of multipurpose trees		
Malawi	Bunda College	Development of OFR for introduction of alley farming	No	On farm
Nigeria	Rivers State University	Effects of intra row tree spacing in alley farming with Diallium guineense and Anthonata Macrophylla on crop yield and tree productivity	Yes	On station
Nigeria	Rivers State University	Alley farming with Dalium guineense in continuous cultivation and fallow rotation	Yes	On station
Nigeria	Imo/Abia States	Assessment of 3 indigenous species for soil erosion control & improved crop yield	Yes	On station
Nigeria	Imo/Abia States	Evaluation of effects of lime and fertilizer in alley farming with Acioa Barterii on acid sands	Yes	On station
Nigeria	Imo/Abia States	Development OFR for introduction of alley farming	No	On farm
Uganda	Makerere University	MPT sceening trial	Yes	On station
Uganda	Makerere University	Assessment of biomass production and crop yields using MPT's in alley farming	Yes	On station
Uganda	Makerere University	Comparison of Leucaena leucocephala and Gliricida sepium in alley farming of beans and maize	Part only	On station
Uganda	Makerere University	Comparison of Leucaena leucocephala and Cassia siamia for fuelwood/pole production and soil fertility effects	Part only	On station
Uganda	Makerere University	As above but with fertilizer	No	On station

A P P E N D I X (15)

PROJECT: Alley Farming Network for Tropical Africa (IITA)

BUDGET (CONT'D)
SCHEDULE OF LOCAL CONTRIBUTIONS
IN U.S. DOLLARS (USD)

IN-KIND:

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Technical Backstopping Support						
Laboratory analysis	2,000	2,000	2,000	2,000	2,000	10,000
Library services	2,000	2,000	2,000	2,000	2,000	10,000
Production and distribution of planting materials	5,000	5,000	5,000	5,000	5,000	25,000
Documentation and communication	3,000	3,000	4,000	4,000	4,000	18,000
Consultancy Support from IITA						
Soil fertility specialist (0.2 person/year)	16,000	16,000	16,000	16,000	16,000	80,000
On-farm adaptive research (0.2 person/year)	16,000	16,000	16,000	16,000	16,000	80,000
Soil microbiologist (0.2 person/year)	16,000	16,000	16,000	16,000	16,000	80,000
Agricultural economists (0.2 person/year)	16,000	16,000	16,000	16,000	16,000	80,000
Agronomist (0.1 person/year)	8,000	8,000	8,000	8,000	8,000	40,000
Training						
Group training	20,000	20,000	20,000	20,000	20,000	100,000
Workshops	-	-	25,000	-	25,000	50,000
Other Support						
Translation services	2,000	2,000	4,000	2,000	4,000	14,000
Computer services	4,000	4,000	4,000	4,000	4,000	20,000
Monitoring tours	-	5,000	5,000	5,000	5,000	20,000
TOTAL	110,000	115,000	143,000	116,000	143,000	627,000*

NOTE: The figures expressed represent either an actual allocation of funds by IITA, or a monetary equivalent of staff or material input.

. . ./16

BUDGET NOTES

Technical Backstopping Support

Laboratory analysis

IITA will backstop the National Agricultural Research Centres in the analysis of soil and plant samples. It is estimated that the samples will be few and in as much as it is feasible national programs will be encouraged to have their own facilities for routine analysis. A figure of 2,000 U.S. Dollars per year is estimated for the entire life of the Project.

> Oui. Les services de l'IITA ont été requis à diverses occasions pour des analyses d'échantillons de sols et plantes provenant des NARS. L'AFNETA est facturée uniquement sur les produits utilisés

Library services

Participating National Agricultural Research Centres will rely to a great extent on the IITA library for literature services. A budget line item of 2,000 U.S. Dollars per year is estimated to cover photocopying and posting charges.

> Oui. Accès aux chercheurs des NARS qui ont l'occasion de se rendre à Ibadan pour des séminaires de formation ou ateliers. Les autres passent par le biais de l'AFNETA

Production and distribution of planting materials

IITA has produced and distributed seeds of shrubs and trees used in Alley Farming. With the initiation of the alley farming network activities the demand for seeds is expected to rise sharply. IITA must be able to respond for requests from the National

Agricultural Research Centres, production handling, storage and mailing of seeds is estimated at 5,000 U.S. Dollars per year for the entire life of the Project.

L'accès à tout matériel végétal disponible est gratuit. Une grande partie des espèces d'arbres devant être testees par les NARS ont été fournies par IITA Sinon l'AFNETA commande et est facturée.

Documentation and communications

This budget line item will cover costs of producing various IITA publications and mailing them to the National Agricultural Research Centres. For the first two years costs are estimated at 3,000 U.S. Dollars per year and rising to 4,000 U.S. Dollars per year during the remaining 3 years.

Les publications de IITA et/ou AFNETA sont particulièrement diffusées lors de l'Assemblée générale et des activités de formation.

Consultancy Support from IITA Scientists

For the purpose of calculation in this exercise on the average 1 person/year scientist is estimated at 80,000 U.S. Dollars.

Soil fertility special

On the average it is estimated that this scientist will spend 20% of his time on Alley Farming activities

Le Dr. B.T. Kang est le principal responsable des activities de l'IITA en matière de culture en couloirs Il est intervenu dans plusieurs projets AFNETA (Kenya, Benin, Nigeria, Ghana, Togo)*

---

* Il est l'un des principaux artisans de la conférence internationale devant se tenir à Ibadan en Septembre 92

Consultancy Support from IITA Scientists (cont'd)

On-Farm Adaptive Research

Again it is estimated that On-Farm Rsearch on Alley farming will take approximately 0.2 scientists person/year

Mme K. Dvorak et M. Mutsaers sont plus spécifiquement impliqués dans les aspects méthodologiques de la recherche en milieu réel.

Soil microbiologist

A conservative estimate is that the soil microbiologist will spend 20% of his time on Alley Farming.

Dr. Mulongoy. Impliqué dans plusieurs projets AFNETA au Cameroun, Benin, Zaïre, Côte d'Ivoire.

Agricultural economists

There are a number of agricultural economists that will work on Alley Farming and it is estimated that their time including the time the Director of RCMP will spend on the Project will be about 0.2 scientist person/year.

Dr. D.S.C. Spencer (membre du Comité de Pilotage) et Dr. Karin Dvorak (viabilité économique de l'agriculture en couloirs).

Agronomist

It is estimated that the agronomist will spend about 10% of his time on Alley Farming activities.

Activités générales : Dr. H. Mutsaers.

Training

Group Training

This course will last for two weeks and one or two courses will be offered per year. A number of scienstist will be involved They may have to travel to other locations to offer the course. The equivalent of 0.2 scientist person/year is estimated.

> Les chercheurs suivants de RCMD ont été impliqués : Drs Mulongoy, B.T. Kang, K. Dvorak, M.J. Swift, S. Jagtap ainsi que le personnel du training Unit (MM. Gulley et Obubo).

Workshops

Two workshops are planned during the third and the fifth year. Each workshop will be for one week and scientists's time and other local support are estimated at 25,000 U.S. Dollars per workshop.

> Les personnes ci-dessus nommées sont ou seront généralement impliquées comme personnes ressources dans tous les ateliers organisés par AFNETA. L'enveloppe est surestimée cependant.

Other Support

Translation services

This estimate is based on past trends of expenditure. translation charges will double during third and fifth years due to the need to translate workshop proceedings.

> Tous les documents de l'AFNETA sont traduits en anglais et français. Les services de l'IITA ne peuvent toutefois répondre à la demande et des traducteurs externes ont dû être recrutés.

Computer services

Again the estimates are based on trends of expenditure.

Peu utilisés. L'AFNETA est désormais bien équipee.

Monitoring tours

This will cover the scientist's time and per diem whils participating in monitoring tours.

Quelques chercheurs du RCMD ont été pris en charge par l'AFNETA.

ILCA CONTRIBUTION IN KIND TO AFNETA

1. Technical support

1.1 Laboratory analysis - ILCA will provide limited backstopping to NARS for analysis of feed and animal samples. NARS will be encouraged to use their own facilities for routine analysis.

Services non requis à date.

1.2 Library and documentation - ILCA will provide library service including abstract scans, photocopy distribution, and distribution of ILCA publications.

Oui. Ces facilités sont accordées aux membres de l'AFNETA.

1.3 Planting material - ILCA has limited facilities for seed production, but is able to provide starting quantities of specific materials to NARS to establish their own trials and/or multiplication unit.

Réalisé : appui apporté par station ILCA/ Ibadan

2.0 HUMAN RESOURCE SUPPORT

(Costing at USD 80,000/SENMAN Year)

2.1 Animal scientist will spend 0.2 man years annual working on alley farming.

Effectif: Drs. Smith et Reynolds.

2.2 Agronomist/AFR scientist - 0.15 man years annually

Drs. J. Cobbina et Larby

2.3 Socio-economist - 0.15 man years annually

Dr. Jabbar. Collaboration de l'AFNETA avec le réseau de recherches sur les ressources fourrageres de l'ILCA (AFRNET).

3.0 TRAINING

3.1 Group Training - 0.1 man years annually will be spent on Group Training.

Appui supérieur : plusieurs chercheurs ont participe aux sessions de formation de l'AFNETA, incluant le Dr. Tripart d'Addis Ababa.

3.2 Individual training - over the 5 year period ILCA will offer reearch facilities for 1 MSc plus 2 PhD candidates.

Non requis à date.

4.0 OTHER SUPPORT

4.1 Computer services assistance will be provide to NARS for the analysis of livestock related data.

Services non requis à date.

X ILCA/ICRAF

5.0 BUDGET DETAILS

70,000.00 USD/year for next five years

REF: ICRAF CONTRIBUTION TO AFNETA

AA. Currently ICRAF has projects in 8 countries in Africa where alley cropping (HEDGEROW INTERCROPPING) are underways. Each of these are direct with national programmes where alley cropping is one aspect of overall agroforestry research programme.
Expect countries to increase from 8 to 17 by 1990.
In each site where alley cropping features as part of experimental work, it is assumed that the national scientists will be associated with AFNETA and benefit from workshops, training, information exchange, study tours etc.

Effectif. Collaboration AFNETA - AFRENA (Réseau de Recherches Agro-Forestières pour l'Afrique).

BB. Currently ICRAF has 13 scientists working in Africa national programmes. We expect this will increase to 25 by 1990 depending of special donor projects for Africa. These scientists are providing direct technical backstopping to national programmes on AF including alley cropping.

CC. In normal course of work and travel ICRAF scientists will be able to provide technical advice to specific national projects dealing with alley cropping please note ICRAFs entire outreach programme is funded by special projects. Therefore our funds are limited by special donor/country requirements where we are active and by agreed work programmes. We do not have great flexibility due to these constraints. If AFNETA required special ICRAF consultants and provides funds ICRAF can provide staff if sufficient time given to programme this involvement.

Collaboration active ICRAF/AFNETA au Cameroun, Ouganda, Kenya et Malawi.

DD. Same as C above. Applies for training/workshops. However, anticipate that ICRAF involvement in AFNETA network steering committee will enable us to coordinate planning ICRAF training courses/workshops with AFNETA to combine resources.

And enable ICRAF scientists/national collaborators to participate fully as resource people and participants. Up to 8 workshops planned per year when AFTENA fully operational i.e. 2 per zone.

Drs. B. Scott, E. Zulberti, M. Avila, F. Owino, D. Ladipo ont été impliques dans formation.

EE. ICRAF information/documentation resources will be available to AFNETA.

Effectif.

FF. ICRAF will provide AFNETA participation national programmes with a venue for publishing results through:

1. Agroforestry abstracts CABI
2. Agroforestry systems journal
3. Agroforestry review (new AF magazine under preparation).

Disponible. Non utilisé jusqu'ici.

GG. AFNETA will have access to ICRAF data bases and models existing (E.G. MULBUD, SCUAF) or under development.

HH. ICRAF anxious to participate as member of AFNETA Steering Committee. (NB. Please advise dateds of first MTG).

M.B. Scott.

X ICRAF

II. ICRAF/OREGON state U and IITA have submitted research proposal on MPT germplasm screening and evaluation to USAID. If approved ICRAF will recruit and post MPT specialist at IITA for purposes of screening MPT for alley farming specifically acid soils of humid tropics. This work will directly relate to AFNETA.

Effectif: Dr. D. Ladipo.

APPENDIX 16

ANNEX

Selected Recommendations and Issues raised by IFAD Supervision Mission, And Response of AFNETA

This Annex is meant to supplement information in section 6.1.2 which discusses IFAD's participation in backstopping and monitoring/supervision of the network. The following are a set of issues raised by IFAD supervision missions over four occasions in the two and a half years of implementation and the response received from AFNETA.

1. Every institution had on-station trials but only 8 of the 60 trials existing in 1990 were on farm. While it was recognised that the research programme was relatively new at the time, with limited knowledge of the concept and practice of AF research on the part of NARS, AFNETA was urged that a greater balance between OSR and OFR should be introduced to ensure greater relevance of research to farming systems.

Response: AFNETA undertook to increase the proportion of OFR trials. By end 1992 36 trials would be directly carried out in farmers fields. In addition, there are at least 200 farmers who have already demonstrated some interest through initial adoption of AF/AC technique, partly as a result of AFNETA's own efforts. These are being closely monitored by participating NARS scientists who are also providing technical assistance and sometimes rudimentary inputs (seeds, fertilizer supplements)etc to the farm participants.

2. It would be useful to group various trials by similarity in agroecological conditions and disseminate this information network -wide, in order to encourage interchange of experience and germplasm material between scientists.

Response: This has been initiated. Projects have been grouped under the various agroecological zones and NARS are fully aware of this classification and there is evidence of this in the increased correspondence and information exchange directly among them. Presentations at the last Annual Meeting (Nairobi) were also structured by AEZ. The end of phase analysis and report is also similarly structured.

The network plans for Year three to strenghten zonal activities through the appointment of zonal coordinators and set-up of zonal information exchange programs.

3. Some countries were undertaking trials with both indigenous and exotic MPTS. However, in the forest and savannah belts in both east and west Africa the hedgerow species were basically restricted to either Lucaena .Leucocephala or Gliricidia Sepium. More work should continue to be done on promising indigenous species, which should be thoroughly screened and evaluated for their multipurpose use and efficiency under intercropping conditions. This would also address the vulnerability of exotic species to pests and diseases especially the Psyllid (Heteropsylla Cubana) which has had a devastating impact on leucaena in Asia.

Response: A lot of management and productivity trials were initiated with the common species, mainly leucaena and Gliricidia. In view of the IITA results with these species over the year there was overwhelming demand from the NARS to initiate their alley farming experiments with these species. While the focus on the two species could, therefore, not be diverted in the first phase, they have proved to be a promising choice in many instances. Simultaneously, however the screening activities have been on-going on other species, both, exotic and those which may be termed naturalised (and familiar to the farmer) and appropriate selection of species from this work will be incorporated in management trials and on-farm studies.

There are plans to incorporate many lot more local species in this work. The indigenous MPT screening activity of ICRAF/IITA/Oregon State Unit; which is going on at Ibadan, Onne (Nigeria) and M'balmayo (Cameroon) is intended to identify local species for the humid acid soil environment. Selections would be incorporated into AFNETA trials especially the OFR experiments, where deemed fit.

4. The livestock component was a major feature in only 25% of the trials, although 50% on more had some reference to the production of browse and fodder but stopped short of assessing the interaction of this "intermediate" product within an Alley Farming framework . Integrated systems including farm animals and reciprocal inputs of animal products (farmyard manure) back into the crop production system have not been adequately represented in the research so far.

Response: The livestock element is important in almost all trials, especially when it moves on-farm. However, initial pre-occupation in most of these trials (except in cases where there is an animal scientist in the team) will be on the tree/crop/soil

aspects. The Steering Committee endorses this initial focus to avoid complex experiments, especiallly in areas where a livestock expert is not in the team. The livestock interaction element will definitely be strengthened as other positive synergisms in the alley farming system come to light in on-going experiments.

5. Many of the weakers NARS were having intial difficulties with trial designs, method of measurements, analysis and evaluation. The problem was compounded by the intricacies of assessing fields of mixed crops/hedgerows and comparing them with controls (without AF situation). There was a general lack of experience in this regard. How was AFNETA planning to redress this situation?

This problem was addressed through the preparation of a methodology manual which was sent to all members. AFNETA training courses have also focussed on this issue. Individual backstopping efforts of the coordinators and other technical consultants have also been provided during monitoring visits to projects. The situation is still far from ideal but the efforts have had significant pay-offs and scientists are now able to cope with much more sophisticated tools of analysis than they could when the initial protocols were developed.

6. There is a need to translate varying costs and benefits of biological aspects of alley farming compared to traditional farming system, into economic and financial terms. Most NARS were not equipped present trial results in economic and financial terms-crucial prerequisites for convincing farmers and policy makers alike to the economic viability of the system, which in turn would sensitize them to address policy issues such as agrarian reforms and create an enabling institutional environment conducive to the adoptability.

Response: The economic and financial analysis of the projects is still found wanting in most situations. This is however understandable, since most of these initial trials have been in preliminary phases and carried out on-station. Realistic socio-economic and financial analysis can be done only at the farm level, though for comparative purposes some information can also be obtained from on-station trials. Strong backstopping assistance in this area is recognised as a requirement and the effort has been to introduce this through training workshops (April 1991) and individual-based technical assistance is planned in the coming year.

7. There exist a number of non-technological issues which would impede adoption of a seemingly robust technology. Labour

availability (gender division of labour) land tenure/tree tenure, weak extension and researcher -farmer reciprocal linkages etc. Such disincentives need to be studied more closely, while in other more favourable environments the issue of short term incentives as well as long term benefits to encourage farmer adoption needs to be assessed.

Response AFNETA is in full agreement. However, once again, this is more realistically and effectively done on-farm. The network has done a lot to sensitise membership on the need to move into developmental OFR and intiate such studies which will be essential for assesment of adoptability. The above mentioned training course was organised in 1991 on this issue. Another has been planned for end 1992. ·An increasing frequency of such training courses and individual backstopping assistance to assist various projects in the development of this component of research is intended in the coming year.

APPENDIX 17

Tableau...-

VENTILATION DU BUDGET GLOBAL DU PROJET SELON

Sources et postes	accord de contribution entre ACDI et CRDI (000 $ can)	accord de contribution entre ACDI et CRDI (000 $ US) (1)	accord de contribution entre CRDI et IITA (000 $ US)
1. ACDI			
A. (1) Coordinat./ass. techn			
coordonateur général	685	535	535
assistant coordonateur	535	417	417
secrétaire	109	85	84
consultants externes	200	156	156
(2) formation	385	300	300
(3) ateliers	120	94	100
sous-total A	2034	1587	1592
B. frais divers			
materiel CNRA	200	156	312 (2)
publications	183	143	142
déplacements coordon.	154	120	120
fournitures + matériel	97	76	76
visites inspection	211	165	165
réun. coord. ann.	301	235	235
véhicule et fonctionnement	30	23	23
sous-total B	1176	918	1073
C. administration			
IITA (18.8%)	-	-	501
CRDI (4.0%)	-	-	0
sous-total C	770	601	501
IMPREVUS	100	78	0
INFLATION	266	208	0
TOTAL ACDI	4346	3392	3166

II CRDI			
contribution CNRA	200	156	0
évaluations	50	39	39
	250	195	39
TOTAL	4596	3587	3205

(1) $ canadien = 0.78 $ US

(2) contribution de 200.000 $ can. ou 156.00 $ US du CRDI inclue

Tableau 2

A F N E T A

Etat des déboursés annuels comparativement aux prévisions

($ U.S.)

	Année 1 (14 mois) 31/3/90	Année 2 (12 mois) 31/3/91	Année 3 (12 mois) 31/3/92	Total (38 mois)
Prévisions	613 000	571 000	665 000	1 849 000
Réalisations	432 894	452 375	610 122	1 495 391
% réalisations	70.6	79.2	91.7	80.9

Source: IITA, Budget and Finance Division

IDRC AFNETA CENTRE FILE NO. 3-P-88-0025 (AFNS)
SUMMARY OF FINANCIAL STATEMENTS SUBMITTED SINCE INCEPTION

CATEGORIES	LIFE BUDGET US $	YEAR 1 REPORT 7 31/3/90 US $	YEAR 2 REPORT II 31/3/91 US $	YEAR 3 REPORT 31/3/92 US $	TOTAL US $	AVAILABLE FROM THE LIFE BUDGET US $
SALARIES AND ALLOWANCES						
PROFESSIONAL STAFF	952,000	111,356	172,590	160,297	444,243	507,757
LOCAL STAFF	84,000	1,254	4,843	4,396	10,493	73,507
TRAINING	300,000	30,761	51,634	47,501	129,896	170,104
WORKSHOP	100,000	0	0	28,822	28,822	71,178
ANNUAL COORDINATION MEETING	235,000	37,871	43,911	64,182	145,964	89,036
RESEARCH EXPENSES:						
NARC EQUIPMENT AND SUPPLIES	312,000	64,762	16,850	83,286	164,898	147,102
NEWSLETTER	32,000	0	1,162	3,075	4,237	27,763
PUBLICATION AND COMMUNICATION	110,000	13,131	13,158	11,312	37,601	72,399
MICROCOMPUTER, OFFICE EQUIP. AND SUPPLIES	76,000	49,873	9,623	20,488	79,984	-3,984
VEHICLE MAINTENANCE	23,000	21,171	4,495	1,695	27,361	-4,361
INTERNATIONAL TRAVEL:						
COORDINATORS	120,000	35,287	7,832	16,095	59,214	60,786
STEERING COMMITTEE	165,000	0	13,292	33,227	46,519	118,481
CONSULTANTS	156,000	14,360	37,531	27,624	79,515	76,485
IITA SUPPORT SERVICES	501,000	53,068	75,454	108,122	236,644	264,356
TOTAL	3,166,000	432,894	452,375	610,122	1,495,391	1,670,609

RECEIPTS			$	CAD $
	FEBRUARY	1989	165,546	197,000
	DECEMBER	1989	145,002	169,000
	DECEMBER	1989	85,194	100,000
	DECEMBER	1990	115,192	134,367
	MAY	1991	187,229	215,969
	JULY	1991	342,467	391,782
	DECEMBER	1991	135,487	151,381
	JUNE	1992	187,695	213,140
TRANSFER FROM FSR 39-86-0270-01			68,894	86,998
			1,432,706	1,660,643

SITUATION DES AVANCES DE FONDS
(en $ canadiens)

Demandées par CRDI à ACDI			autorisation de paiement accordée	Sommes reçues par IITA	
N°	date	montant (1)	par ACDI le	date	montant
1.	6.10.88	260 386	25.10.88	02.89	197 000
2.	13.07.89	133 681	NO	12.89	169 000
3.	17.10.89	208 874	3.11.89	12.89	100 000
4.	9.03.90	219 823	23.03.90	12.90	134 867
5.	16.07.90	134 867 (2)	18.09.90	05.91	215 969
6.	22.04.91	390 898 (3)	5.06.91	07.91	391 782
7.	3.07.91	322 995	26.07.91	12.91	151 881
8.	13.12.91	88 002	23.12.91	6.92	213 146
9.	27.01.92	25 451	31.01.92		
		1 651 295			1 573 645
				7.92 (4)	86 998
					1 660 643

Notes:

(1) chiffres arrondis au dollar près

(2) 139 408 $ demandés par CRDI. La différence résulte de corrections apportées aux frais d'administration du CRDI par ACDI

(3) 403 991 $ demandés. (corrections du même ordre)

(4) tranfert du solde du projet FSR—39—86—270—01

TITRE DU PROJET : ALLAY FARMING FOR TROPICAL AFRICA IITA

NUMERO DE PROJET : 3-P-89-0025

UNITE MONETAIRE : $ CANADIEN

	ANNEE 1					ANNEE 2												
	BUDGET TOTAL	BUDGET 31/03/90	DEPENSES 31/03/90	SOLDE	POURCENT	BUDGET	DEP 31/03/91	SOLDES AU31/03	POURCENT	BUDGET	DEPENSE 01/04 30/9/91	DEPENSES 01/10 31/12/91	PROJET 01/01 30/03/92	PROJET 01/04 30/6/92	DEPENSES FAITES & PRE	SOLDES PREVUES 03/92	POURCENT.	DEPENSES FAITES & PREVUES
ADMINISTREE PAR LE BENEF.																		
SALARIES AND ALLOWANCES	1529000	295000	133682	162398	45%	249000	208934	40066	84%	249541	103464	33971	69491	69491	206926	42615	83%	617953
TRAINING	385000	77000	36222	40778	47%	77000	60801	16199	79%	76782	36450	5235	11738	11738	53423	23359	70%	162185
WORKSOP	128000	0	0	0		0	0	0		63985	31219	0	0	0	31219	32766	49%	31219
ANNUAL CO-ORDINATION MEETING	301000	51000	44594	6406	87%	51000	51787	-787	101%	63985	4800	44538	35215	0	84553	-20568	132%	180655
RESEARCH EXPENSES	400000	80000	76260	3740	95%	80000	21137	58863	26%	0	179	35638	5869	5869	41678	-41678		144944
NEWSLETTER	41000	6000	0	6000	0%	8000	1367	6633	17%	6959	0	3576	2054	2054	5630	3329	63%	9951
PUBLICATION AND COMMUNICATION	142000	26000	15462	10538	59%	26000	15494	10506	60%	25594	-581	11469	8217	8217	19104	6410	75%	58357
EQUIPMENT AND MAINTENANCE	127000	69000	83657	-14657	121%	13000	15329	-2329	118%	94678	17436	-7937	9391	9391	15941	75757	20%	127319
INTERNATIONAL TRAVEL	365000	26000	41552	-15552	160%	64000	24874	39126	39%	83188	6505	57576	5869	5869	71950	11238	86%	144245
CONSULTANT	200000	33000	16909	16891	51%	46000	44194	1806	96%	49908	14269	5144	17607	17607	37021	12887	74%	115732
IITA SUPPORT AND SERVICES	642000	125000	62489	62511	50%	115000	88850	26150	77%	134368	55365	26465	31187	24486	112934	21434	84%	288760
T O T A L R A P >>>>	4060000	788000	509748	278252	65%	729000	532687	196313	73%	851000	271238	215664	196558	154723	683460	167540	80%	1880618
ADMINISTREE PAR LE CENTRE																		
FORMATIONS	50000	0	0	0		0	0	0		0	0	0	0	0	0	0		0
FRAIS ADMINISTRATIFS CRDI	155000	31000	0	31000	0%	31000	0	31000	0%	0	0	0	0	0	0	0		0
IMPREVUS	480000	480000	0	480000	0%	0	601	-601		0	0	0	0	0	0	0		601
T O T A L C A P >>>>	685000	431000	0	431000	0%	31000	601	30399	2%	0	0	0	0	0	0	0		601
TOTAL DE LA SUBVENTION >>>	4665000	1219000	509748	709252	42%	760000	533298	226712	78%	851000	271238	215664	196558	154723	683460	167540	80%	1881219

Tableau 6

DATES DE PRESENTATION ET DELAIS DE TRANSMISSION DES PREVISIONS ET DECAISSEMENTS TRIMESTRIELS ENTRE IITA - CRDI - ACDI

Période trimestrielle	Objet	Date de transmission	
	(1)	de IITA à CRDI	de CRDI à ACDI
01/07/90 - 30/09/90	DC	22/01/91	22/04/91
01/10/90 - 31/12/90	DT	23/05/91	NON
	DC	16/04/91	—
01/01/91 - 31/03/91	DT	23/05/91	NON
	DC	23/05/91	03/07/91
01/04/91 - 30/06/91	PT	16/04/91	03/07/91
	DT	12/09/91	NON
	DC	12/09/91	13/12/91
01/07/91 - 30/09/91	PT	16/04/91	03/07/91
	PTR	12/09/91	13/12/91
	DT	21/11/91	NON
	DC	21/11/91	27/01/92
01/10/91 - 31/12/91	PT	12/09/91	13/12/91
	PTR	21/11/91	27/01/92
	DT	30/04/92	NON
	DC	30/04/92	NON
01/01/92 - 31/03/92	PT	21/11/91	27/01/92
	PTR	30/04/92	NON
	DT	13/07/92	—
	DC	13/07/92	—
01/04/92 - 30/06/92	PT	30/04/92	NON
	PTR	13/07/92	—
01/07/92 - 30/09/92	PT	13/07/92	—

N.B Examen des dossiers à l'ACDI et au CRDI: fin juin 1992, à l'IITA: début août 1992

(1) Légende: PT: prévisions trimestrielles
PTR: prévisions trimestrielles revisées
DT: déboursés trimestriels
DC: déboursés cumulés depuis le début du projet

Tableau 7

ENVERGURE DU PRE-FINANCEMENT DU PROJET AFNETA PAR IITA

Etats financiers Nos	Date correspondance IITA à CRDI Dakar	Période couverte prenant fin le	Pré-financement par IITA (US$)
9	22/01/91	30/09/90	205,834
10	16/04/91	31/12/90	458,730
11	23/05/91	31/03/91	389,108
12	12/09/91	30/06/91	18,211
13	21/11/91	30/09/91	93,448
14	30/04/92	31/12/91	143,432
15	13/07/92	31/03/92	62,685

Source: IITA, Budget and Finance Division

APPENDIX 18

SUMMARY SHEET

Schedule 1

IFAD/AFNETA IN COUNTRY RESEARCH ANALYSIS OF EXPENDITURES OF VARIOUS INSTITUTIONS FOR THE YEAR 1991 (NARS)

NAMES	TOTAL				PERSONAL EMOLUMENTS		OPERATIONAL EXPENSES			
	Balance B/FWD A	1991 Receipt B	Total Grant A+B	1991 Expenditure	Research Coordination	Research Technicians	Casual Labour	Soil & Plant Analysis	Research Materials	Local Travel & Overtime
UNI. IBADAN BOTANY & MICROBIOLOGY DEPT. - NIGERIA	11,517.31	7,700.00	19,217.31	18,291.28	507.91	0.00	1,735.91	580.20	3,234.15	142 92
RIVERS STATE UNI. OF SCIENCE & TECH. PORT -NIGERIA	3,725.00	7,750.00	11,475.00	11,034.50	900.00	2,250.00	5,434.60	507.30	244.80	200.00
LEVENTIS AAGRICULTURAL SCHOOL, ILESA - NIGERIA	-496.57	2,648.66	2,152.09	3,201.37	548.24	1,259.63	604.73	67 99	271 00	332.34
IMO STATE AGRICULTURAL PROJECT - NIGERIA	5,617.19	1,850.00	7,467.19	0.00	0.00	0.00				
UNI. IBADAN DEPT. OF AGRONOMY - NIGERIA	5,363.43	12,076.83	17,440.26	6,078.34	504.80	2,724.11	516.11	508.88	942 30	222.22
BINDA COLLEGE OF AGRICULTURE MALAWI	7,819.34	3,570.50	11,389.84	18,284.27	1,840.17	0.00	8,790.51	4,526.42	1,346 65	1,658 97
MALAWI TOBACCO RESEARCH AUTHORITY	7,371.29	3,433.50	10,804.79	0.00						
INSTITUT DE RECHERCHES ZOOTECHNIQUES - CAMEROON	7,356.00	6,250.00	13,606.00	0.00						
INSTITUT DE LA RECHERCHES AGRONOMIQUES- CAMEROON	6,203.00	12,950.00	19,153.00	15,527.00	0.00	4,273.00	1,085.00	500.00	6,246 00	1,037 00
INSTITUT DES SAVANES COTE D'IVOIRE - IDESSA I	10,933.40	12,200.00	23,133.40	11,202.00	299.00	0.00	2,024.00	0.00	0 00	3,839.00
INSTITUT DES SAVANES COTE D'IVOIRE - IDESSA II	0.00	3,000.00	3,000.00	8,187.00	0.00	46.00	3,997.00	0.00	2,249.00	0.00
INSTITUTE OF RENEWABLE NATURAL RESOURCES, GHANA	10,864.31	10,000.00	20,864.31	15,548.99	1,200.00	3,200 00	3,167.80	303.03	1,511 85	2,643 95
FOREST PRODUCES RESEARCH INSTITUTE GHANA	5,312.52	2,146.50	7,459.02	0.00						
UNITE DE RECHERCHES FORESTIERS BENIN	-5,750.45	4,850.00	-900.45	0.00						
STATION DE RECHERSCHES SUR LESCULTURE VIVRIERS BENIN	3,141.53	3,413.00	6,554.53	0.00						
UNITE DE RECHERCHES ZOOTECHNIQUES ET VET- BENIN	9,125.21	7,424.50	16,549.71	0.00						
INSTITUT DE RECHERCHES EN BIOLOGIE - B/FASO	5,040 00	6,950.00	11,990.00	8,040.55	558.00	3,266 59	453.43	34 00	1,225 00	1,803 03
DIRECTION NATIONALE DE LA RECHERCHES AGRONOMIQUE - GUINEA	7,127 25	6,525.00	13,652 25	0.00						
INSTITUTE OF AGRICULTURAL RESEARCH - S/LEONE	15,573 95	6,435.00	22,008 95	1,745.11	103 45	897 00	0 00	0 00	0 00	382 59
ROKUPR REPORT S/LEONE	0.00	0.00	0 00	0 00						
FACTULTY OF AGRICULTURE MAKERERE UNIVERSITY - UGANDA	10,115 60	7,700.00	17,815 60	5,372.85	254.00	382 50	863.67	86 67	983 58	1,603 25
ZAIRE APPLIED AGRICULTURE RESEARCH KASAI REGION	-3,241 90	12,900 00	9,658.10	3,572.87	378 45	624 19	808.06	147 59	481 82	925 45
ZAIRE APPLIED AGRICULTURE RESEARCH BASE REGION	3,945 33	1,550 00	5,495 33	0.00						
INSTITUT NATIONAL DES SOLS (INS) - TOGO	1,286 86	8,250.00	9,536.86	7,178.80	720.00	2,250 00	3,129.20	0 00	560.00	480 00
SORONE UNIVERSITY OF AGRICULTURE - TANZANIA	10,393 23	6,800.00	17,193.23	-1,134.40	-70.29	-89.46	-93.74	-217 26	-213 00	-256 45
AGRIC RESEARCH INSTITUTE - TANZANIA	11,800.00	3,025.00	14,825.00	10,599.80	0.00	0 00	228.92	0.00	3,064 83	2,323 95
ALEMAYA UNIVERSITY OF AGRIC. - ETHIOPIA	9,050.00	3,150.00	12,200.00	6,339.65	0.00	0 00	3,426.23	0.00	0.00	1,731.17
CENTRAL AGRIC. RESEARCH INST. - LIBERIA	12,032.00	3,320.00	15,352.00	0.00	0.00					
INSTITUT DES SCIENCE AGRONOMIQUE - RWANDA	13,000.00	0.00	13,000.00	15,664.12	0.00	5,202.90	1,792.42	0.00	1,181.90	6,735.44
MINISTRY OF AGRICULTURE - ZAMBIA	10,900.00	2,475.00	13,375.00	0.00						
KENYA FORESTRY RESEARCH INST. (REFRI) KENYA	0.00	4,000.00	4,000.00	0.00						
KENYA AGRICULTURE RESEARCH INST. (KARI) KENYA	0.00	3,000.00	3,000.00	0.00						
INSTITUT SENEGALAIS OF RECHERCHES AGRICOLES (ISRA) SENEGAL	0.00	8,025.00	8,025.00	8,235.89	0.00	0.00	5,252.47	0.00	0.00	268.76
DEPARTEMENT DE BIOLOGIE VEGETALE, UNI. DE DAKAR SENEGAL	0.00	4,000.00	4,000.00	9,442.31	0.00	3,700.00	597.42	2,008.80	1,030.00	840.00
TOTAL	195,124.83	189,368.49	384,493.32	182,412.30	7,743.73	29,986.46	43,813.74	9,053.62	24,359 88	26,913.59

NAMES	IN COUNTRY TRAINING				CAPITAL EQUIPMENT					
	Regional Training Zaire coordination	International Travel	Regional	Post Graduate	Farm Tools	Cypsium Blocks Accessories	Motor Cycles	Oven	Stereo Microscope & Adaptors	Stainless Sieves & Others
UNI. IBADAN BOTANY AND MICROBIOLOGY DEPT. - NIGERIA	0.00	0.00	0.00	2,418.04	20.92	4,316.97	0.00	0.00	3,966.63	1,072.95
RIVERS STATE UNI. OF SCIENCE AND TECH. PORT - NIGERIA	0.00	0.00	200.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
LEVENTIS AGRICULTURE SCHOOL, ILESA - NIGERIA	0.00									
IMO STATE AGRICULTURE PROJECT - NIGERIA	0.00									
UNI. IBADAN DEPT OF AGRONOMY - NIGERIA	0.00						352.22			
BUNDA COLLEGE OF AGRICULTURE MALAWI	0.00									
MALAWI TOBACCO RESEARCH AUTHORITY	0.00									
INSTITUT DE RECHERCHES ZOOTECHNIQUES - CAMEROON	0.00									
INSTITUT DE LA RECHERCHES AGRONOMIQUES - CAMEROON	0.00						2164.00			
INSTITUT DES SAVANNES COTE D'IVOIRE - IDESSA I	0.00									
INSTITUT DES SAVANNES COTE D'IVOIRE - IDESSA II	0.00									
INSTITUTE OF RENEWABLE NATURAL RESOURCES - GHANA	0.00							1600.00		
FOREST PRODUCES RESEARCH INSTITUTES - GHANA	0.00									
UNITE DE RECHERCHES FORESTIERS - BENIN	0.00									
STATION DE RECHERCHES SUR LESCULTURES - BENIN	0.00									
UNITE DE RECHERCHES ZOOTECHNIQUES ET VET - BENIN	0.00									
INSTITUT DE RECHERCHES ENBIOLOGIES - B/FASO	0.00									
DIRECTION NATIONALE DE LA RECHERCHES AGRONOMIQUE -GUINEA	0.00									
INSTITUTE OF AGRICULTURAL RESEARCH - S/LEONE	0.00			80.46	64.37					
ROKUPR PROJECT - S/LEONE	0.00									
FACULTY OF AGRICULTURE MAKERERE UNI - UGANDA	0.00									
ZAIRE APPLIED AGRICULTURAL RESEARCH KASAI REGION	0.00									
ZAIRE APPLIED AGRICULTURAL RESEARCH BASE REGION	0.00									
INSTITUT NATIONALE DES SOLS (INS) TOGO	0.00									
SOKOINE UNIVERSITY OF AGRICULTURE -TANZANIA	0.00									
AGRIC. RESEARCH INSTITUTE - TANZANIA	0.00									
ALEMAYA UNIVERSITY OF AGRIC. - THIOPIA	0.00									
CENTRAL AGRIC. RESEARCH INST. - LIBERIA	0.00									
INSTITUT DES SCIENCE AGRONOMIQUE - RWANDA	0.00									
MINISTRY OF AGRICULTURE - ZAMBIA	0.00									
KENYA FORESTRY RESEARCH INST. (KERRI) KENYA	0.00									
KENYA AGRIC. RESEARCH INST. (KARI) KENYA	0.00									
INSTITUT SENEGALAIS DE RECHERCHES AGRICOLAS (ISRA) SENEGAL	0.00									
DEPARTMENT DE BIOLOGIE VEGETALE, UNI. DE DAKAR SENEGAL	0.00									
TOTAL	0.00	0.00	200.00	3398.50	85.29	4316.97	2516.22	1600.00	3966.63	1072.95

NAMES	OPERATIONAL EXPENSES				
	Operation of Motor Cycle	International Travel	Station and Publication costs	Organization of Village demonstration	Const. of Run Off Plot
UNI. IBADAN BOTANYS MICROBOLOGY DEPT. - NIGERIA	0.00	0.00	294.68	0.00	0.00
RIVERS STATE UNI. OF SCIENCE AND TECH. PORT - NIGERIA	0.00	0.00	285.80	112.00	0.00
LEVENTIS AGRICULTURE SCHOOL, ILESA - NIGERIA	0.00	0.00	117.44	0.00	0.00
IMO STATE AGRICULTURE PROJECT - NIGERIA	0.00				
UNI. IBADAN DEPT OF AGRONOMY - NIGEIRA	0.00	0.00	22.22	106.66	178.82
BUNDA COLLEGE OF AGRICULTURE - MALAWI	0.00	0.00	121.55	0.00	0.00
MALAWI TOBACCO RESEARCH AUTHORITY	0.00				
INSTITUT DE RECHERCHES ZOOTECHNIQUES - CAMEROON	0.00				
INSTITUT DE LA RECHERSCHES AGRONOMIQUES - CAMEROON	132.00	0.00	90.00	0.00	0.00
INSTITUT DE SAVANNES COTE D'IVOIRE - IDESSA I	4917.00	0.00	123.00	0.00	0.00
INSTITUT DE SAVANNES COTE D'IVOIRE - IDESSA II	1461.00	180.00	254.00	0.00	
FOREST PRODUCT RESEARCH INSTITUTES - GHANA	0.00	1400.00	522 36	0.00	0.00
UNITE DE RECHERCHES FORESTIERS - BENIN	0.00				
STATION DE RECHERCHES SUR LES CULTURE - BENIN	0.00				
UNITE DE RECHERCHES ZOOTECHNIQUE ET VET- BENIN	0.00				
INSTITUT DE RECHERCHES ENBIOLOGIE - BURKINA FASO	0.00	0.00	700.50	0.00	0.00
DIRECTION NATIONALE DE LA RECHERCHES AGRONOMIQUE - GUINEA	0.00				
INSTITUTE OF AGRICULTURAL RESEARCH - S/LEONE	0.00	0.00	217.24	0.00	
ROKUPR PROJECT - S/LEONE	0.00				
FACULTY OF AGRICULTURE MAKERERE UNI. - UGANDA	0.00	916.67	197.84	0.00	84.67
ZAIRE APPLIED AGRICULTURE RESEARCH KASAI REGION	0 00	205.94	1 37	0 00	0 00
ZAIRE APPLIED AGRICULTURE RESEARCH BASE REGION	0 00				
INSTITUT NATIONALE DES SOLS (INS) - TOGO	0.00		39.60		
SOKOINE UNIVERSITY OF AGRICULTURE - TANZANIA	1,398.77	-40.00	154.20	0.00	1398.77
AGRICULTURAL RESEARCH INSTITUTE - TANZANIA	0 00	3959.09	1023.01	0.00	0 00
ALEMAYA UNIVERSITY OF AGRIC. - ETHIOPIA	0 00	0.00	1182.25	0 00	0.00
CENTRAL AGRIC. RESEARCH INST. - LIBERIA	0 00				
INSTITUT DES SCIENCE AGRONOMIQUE - RWANDA	0.00	0.00	751 46		
MINISTRY OF AGRICULTURE - ZAMBIA	0 00				
KENYA FORESTRY RESEARCH INST. (KEFRI) KENYA	0 00				
KENYA AGRIC. RESEARCH INST. (KARI) KENYA	0.00				
INSTITUT SENEGALAIS DE RECHERCHES AGRICOLSS (ISRA) - SENEGAL	0.00	0.00	2714.66	0.00	0.00
DEPARTEMENT DE BIOLOGIE VEGETALE, UNI. DE DAKAR, SENEGAL	0.00	0.00	0.00	0.00	1266.09
TOTAL	7908.77	6621.70	8504.78	218.66	130.81

APPENDIX 19

S.E. NIGERIA

RIVERS STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY

The team was only able to visit one of the three trials being funded at the RSUST, due to time constraints that were compounded by delays in travelling.

1. POSITIVE ASPECTS

The team was glad to note that:

a) An attempt had been made to provide background literature about the work being conducted under AFNETA (even though some of it was still being collated on the team's arrival).

b) The RSUST had adopted a multi-disciplinary approach in beginning on-farm trials, through employing a multi-disciplinary research team.

2. RESEARCH PROTOCOL

Comments in this section refer only to the trial visited - "Effect of tree spacing (within row) in alley farming with Acioa barterii and Anthonata mycrophylla on tree productivity and crop yield".

a) General execution of the trial was poor.

- The layout did not follow that set out in the protocol, with the result that in many plots the tree alleys will be subject to strong edge effects. Any statistical analysis will be fraught by this fundamental flaw.

- Establishment of Anthonata mycrophylla was very poor, at least in part due to the use of wildings brought from the nearby forest rather than seedlings. These had suffered heavy mortality in the first year. Whilst it is difficult to justify the use of wildings in any experimental situation, it was recognized that the RSUST had been anxious to go ahead with trial establishment in the first year of funding, and in the absence of seed and therefore quality planting material, had attempted to do what it could. However, there had still been no attempt to raise A. mycrophylla seedlings in the nursery in the second year to infill the mortalities: more wildings were being used instead. This was despite the fact that the technique for raising the species is well known, and was being conducted sucessfully on the nearby IITA station.

- As a result of the poor establishment of A. mycrophylla, tree growth was very erratic. It also displayed considerable variation in the alleys of Dialium guineense (this species having been substituted for Acioa barterii). The larger trees had been lopped, in a very irregular manner, and the prunings scattered on the ground. This had only added to unquantifiable variation between and within plots.

- Site clearance for the trial had been conducted at great expense. However, clearing had not been adequate to ensure

reasonable uniformity; there were obvious differences across the site.

b) Tree species choice. Although one of the species used did not follow the protocol, the team was pleased to note the attempt to employ local indigenous species.

3. RESEARCH FOCUS

a) Problem identification

The problem that the research sought to address did not appear to have been clearly identified. It seemed to be assumed that the major local problem in the area was sustaining soil fertility, without this assumption being justified from available data or discussions with farmers.

One result of the poor research conceptualization was a tendency to collect and catalogue as much information as possible, regardless of its potential use. For example, when clearing the on-station trial sites, every tree felled was recorded by size and species. Similarly, the socio-economic questionnaire, "Study on Alley Farming in Rivers State" (conducted when initiating on-farm research) required farmers to answer numerous questions which had little pertinence to the immediate research, and were in any case of a sensitive nature (and hence unlikely to be answered accurately). The processing of data arising from this questionnaire would have taken a large amount of time and achieved little in advancing knowledge.

b) Livestock

There has been no livestock component in the research to date.

c) On-farm research

Given that alley farming research is quite new at the RSUST, the attempt to commence on farm research is to be welcomed. The scientists noted that it was only through AFNETA that they had been given this opportunity; they had had no previous experience of on-farm work.

Although the socio-economic questionnaire has been criticised, the attempt to collect socio-economic information from farmers should nevertheless be encouraged.

IMO STATE AGRICULTURE DEVELOPMENT PROJECT (ISADEP)

1. GENERAL ASPECTS

The team noted that there have been political difficulties hampering the smooth running of this research. The region has recently been split into two states - Imo and Abia, and whilst the physical location of the trials is in Imo, all of the trial documentation has been taken to Abia Univerity. This includes both research data and all documentation pertaining to the finances and management of the trials. There was initially much unwillingness to cooperate between the two states. Researchers belonging to both sides were present to meet the team, and an agreement for future collaboration was made.

2. RESEARCH PROTOCOL

a) General execution of the two research trials was good.

b) Soil research. Experiment I, "Assessment of three local woody species in alley farming to reduce run-off and erosion on slopy land" sought to quantify run-off and erosion. However, the data being collected by the researchers went beyond this and it was felt that much time and effort was being expended in gaining figures that would not lead to any advancement in knowledge.

3. RESEARCH FOCUS

a) Problem identification

Despite point 2b), the problem that the research seeks/sought to address was well identified, particularly in the case of experiment II, which sought to modify and improve a local system of agroforestry already being practised by farmers.

b) Livestock

There has been no livestock component in the research to date.

c) On-farm research

It was noted that experiment III as laid out in the protocol, Developmental OFR, has not yet commenced.

MICHEAL OKPARA COLLEGE OF AGRICULTURE

The College receives a small grant from core AFNETA funds, and does not have a separate project status. Alley farming research began at the college in 1986, and comprises an evaluation of five tree species. A research protocol was not provided to the team for evaluation. The trial appeared to have been executed well. It contained an interesting choice of tree species, including a number that are indigenous to the locality.

BENIN

1. General observation

The team observed that three research institutes were involved with AFNETA Projects viz:

URZV: Unité de Recherche Zootechnique et Vètérinaire

URF: Unité de la Recherche Forestière

SRCV: Station de Recherche sur les Cultures Vivrières

All of these Institutes carried on on-station research as their major activity. They submitted research proposals to AFNETA. URF in collaboration with Centre National d'Agro-Pédologie (CENAP) conducted a trial on "Screening of Multipurpose Trees for two contrasting agroecological zones in Benin". The trial was supposed to identify local and exotic species as well as assess productivity of local multipurpose trees, assess improvement potentials and test feed value/quality of local species. Among the tree species assessed, some performed well in both semi-arid and semi-humid zones. It was observed that the sub-trial on feed value had not been started. There was no clear understanding of the parameters to be used in the soil improvement trial even though the researcher hopes to collaborate with soil analysts. It was observed that the objective of the study was not well-defined, the researcher had not yet assessed local MPTs and did not appear to have in-depth knowledge of the objectives and assessment parameters.

URZV

Principal Investigator: Dr Marcellino Ehouinssou

Three research areas were proposed:

- Productivity of grass and tree fodder in an alley farming system (at Agonkanmey)

- Effect of Leucaena leucocephala mulch on grass productivity and quality in alley farming (at Niaui)
- Palatability and digestibility of tree fodder and tree fodder/grass mixtures (at Agonkanmey).

Research protocol

The general execution of the projects was commendable. The execution was in line with the protocol laid out. However in the first experiment, a mix of Brachiaria ruziziesis, and Pennisetum Purpureum was compared against Panicum-maximum.

(b) Tree species

The usual Leucaena leucocephala, and Gliricidia sepium were used as in the protocol. Future work might necessitate studies on-farm with local species that serve more purposes to the farmer

(c) Establishment

Researchers showed that P. maximum strangled the trees while total grass production in control plots was higher than in plots with trees. Better results might have been obtained by planting trees before introducing the grass. Establishment of the B. ruzizensis and I. purpuraum was poor

(d) Soil

Variability in growth of trees was very pronounced. There was no soil analysis done and this is necessary to obtain baseline information on soil characteristics and assess effect productivity.

(e) Livestock

The study showed that the dietary treatment with 50% P. maximum and 50% G. sepium caused diarrhoea with the goats. The team observed that the housing for the goats appeared too restrictive as the construction was very tight and gave the

animals very little area for movement. There was no proper gadget for collection of faeces and urine.

RESEARCH FOCUS

(i) The team needs to focus its research on a variety of local and indigenous tree species

(ii) The choice of grass used should be such as that there would be no competition with the tree species; alternatively the establishment of both grass and tree species could be staggered.

(iii) Study could be made of toxic factors present in the grass and tree species used

(iv) Future Focus

Alley farming has been researched into in Benin for some time. Many researchers in the three Institutes have participated in seminars, workshops and training courses organized by AFNETA. Much more work is expected in terms of livestock trials and on-farm research.

SRCV: Principal Investigator - Alkou Kouessi

Three trials were proposed in the protocol:

(i) Screening of multipurpose trees

(ii) Effect of K-fertilizer on maize yield in an alley system

(iii) Development of OFR for introduction in alley farming

In the first trial, the protocol aimed at screening fast growing leguminous multipurpose tree/shrub species for use in alley farming and agroforestry systems in southern Benin. Two sites were used - a newly cleared land and a degraded site. The degraded site had an acidic sandy soil (PH 4.2). There was imbalance in the nutrient status of the soil.

General Observation

The researchers modified the protocol and were able to use some indigenous (9) and exotic (4) species. Also included were some species which could be used for livestock supplementary feeding. Even in the screening trial fertilizer was applied for ease of establishment. Results were said to have convinced farmers in the neighborhood on the future of trees in their farming system. The team observed that the third trial (Development of OFR for introduction of alley farming) has still not taken off the ground even though there is a local need for improving soil fertility.

The experiments were well established. The modification introduced can be applied in other sites and incorporated in farmers field. Further studies might also be incorporated, for example:

- Assessment of best trees with regard to nodulating potential
- Method and best time for pruning
- Soil analysis of sites before the start of experiments and monitoring of soil status of sites used for experiments.

Institutional and financial issues

It would appear that institutional and financial management of AFNETA Projects are good. This still has to be strengthened by regular monitoring. A review of all the Projects should be done and reports made on quarterly or at the least biannual basis. Strict compliance with the terms of agreement is called for. The conditions under which the researchers work are difficult and do not enhance productivity. Scientists should give a clear picture of objectives, procedure, methodology etc and avoid creating doubts and confusion with farmers. The concept of "free" inputs should be worked out to avoid confusion with farmers.

Linkages

The relationship between farmer and researcher was not optimal. Also the relationship between on-going research and problems in the farmers community calls for a reorientation. It was observed that there is interdisciplinarity among research collaborators but there is further need to associate on-going research with livestock and socio-economic experts. The team observed that the role of livestock lags behind and so the livestock component is very deficient. The team was informed that it was difficult to collect data for economic analysis because there are 8 situations. It was opined that each economic situation must relate to each system and this would mean 8 systems.

The team spent one day visiting the RAMR Project in Mono Province, where alley farming was introduced on-farm from 1986 onwards. Useful linkages could be further developed between AFNETA and this project.

Training

Benin serves as a regional centre for AFNETA courses. During the team's visit, there was an on-going regional course at the IITA Station (Calavi: 13-24 July 1992) with 18 participants from 8 countries. The need now arises to train people at the lower level especially extension agents, technicians, community leaders and the beneficiaries – the farmers. The core trainers exist and could initiate in-country training at their own expense.

G H A N A

INSTITUTE OF RENEWABLE NATURAL RESOURCES, KUMASI

1. POSITIVE ASPECTS

The team was pleased to note that.

a) Report presentation was clear, concise and gave a good analysis of results and conclusions.

b) Linkages and a multi-disciplinary approach were well developed, with:

- good inter-departmental and NGO linkages
- a fully multi-disciplinary research team.

c) Financial aspect were

- fully integrated with the overall research programme
- seemed well controlled, with an established separate AFNETA account (which was noted to be in US $).

2. RESEARCH PROTOCOL

a) General Execution of the trials visited was good.

b) Tree Species selection was a little disappointing, although the constraints of seed availability were understood.

There appeared to have been no attempt to investigate what species farmers perceive to be important in providing a variety of products (for example food, fodder, poles and fuel, as well as soil fertility) Bushy woody species could have been given attention, as well as species that grow into large trees.

- Indigenous species were pooly represented

c) Soil focussed research. According to the AFNETA donor agreement, experimental design should involve two levels - high and low fertility, with appropriate management regimes for each.
The team was glad to observe that the experimental sites selected did represent different soil fertility levels: however, there was no indication of experimental design having been modified to suit the different sites

d) CropChoice was limited to cassava and maize, a closer approximation to the mixed cropping pattern on farmers' fields would have been welcome.

e) Livestock have unfortunately not been included so far in experimental designs.

f) Extension linkages. It was noted that the UST's Department of Agricultural Economics and Farm Management are said to have an agricultural extension outreach program in villages around Ejisu. The team suggested that collaboration in future on-farm work on alley farming should be investigated.

3. RESEARCH FOCUS

a) Problem Identification

The problem that the research seeks / sought to address did not appear to have been clearly identified. Emphasis was given to soil fertility, although the fertility of the soils in much of the area did not appear to be a critical problem.

b) Time Span of Research

Alley farming research has been conducted by the IRNR since 1984. Given this long period, the team was a little disappointed that research had not progressed further, and that there was very little evidence of local adoption.

c) On-farm research

The team was somewhat anxious about the early approach taken in progressing to on-farm research. The one farmer whom the team met did not appear to fully understand the potential advantages of alley cropping. His participation in the trial seemed to be governed by an anticipation of material benefits from the project. It was unfortunate that the contractual agreement between him and the project seemed to have been poorly defined.

G H A N A

F O R I G / A F N E T A P R O J E C T

1. GENERAL OBSERVATION

The team was impressed with the volume of work done. It was noted that the research involved an interdisciplinary team. Both researchers and technicians worked together and were involved in the work. There was direct link between FORIG and AFNETA scientists and collaborators.

2. TECHNICAL ISSUES

2.1 Management

Sowing time was different with farmers' practice. Sowing time depended on pruning time. Farmers' field showed good growth of maize but failure with researchers It is adviseable to sow at the same time as farmers Cajanus should have been replanted and not eliminated from the trial.

2.2 Research Protocol

Generally the research protocol was adhered to. Local species were difficult to establish when seedlings were transplanted. Spacing seemed too wide encouraging growth of weeds.

2.3 Information

The technology is new and efforts should be made to disseminate the information. The existance of NGOs who have adopted the technology (Agroforestry Unit. Adrucom Project) showed good results. A farmer and his wife (Mr & Mrs Atibila) who are full-time teachers have adopted the technology and used on their farm to improve soil fertility, increase crop production, provide fuelwood and dry season fodder for livestock. Other neighbour farmers are copying from them.

2.4 Crop Choice - Limited to cereals and soybeans

2.5 Livestock - So far not included in trials. Observed that farmers feed livestock with groundnut leaves during the dry sason and supplement with Ficus leaves.

2.6 Training

Technicians work directly with Farmers. The team believes that it would be beneficial to the project if technicians undergo intensive training in the new technology.

2.7 Monitoring

There was deficiency here. farmers' needs and problems should be monitored so as to sustain their interest. The project should work out a strategy and be aware of their responsibility, risks involved and be prepared for eventualities. The project should monitor progress in execution, farmers' ideas and change and be ready to offer solutions. Monitoring should assess

- responsibility for various farming activities
- increase in farming activities as affect household activities
- competition between increased farm activities and household activities
- socio-economic effects of new technology on household

3. PREVIOUS RESEARCH

Agroforestry has been in the project area. There is lack of articulation between AFNETA projects and previous agroforestry trial. With long existence of AFNETA in Ghana, it is essential to have a well-defined system of data collection, storage and retrieval to link previous studies with present and future studies in the project.

COTE - D'IVOIRE
INSTITUT DES SAVANNES (IDESSA)
(BOUAKE)

PROJET No. 1

Responsable: Monsieur Sékou DOUMBIA

Essai no. 1 : Criblage

Cinq variétés d'arbustes ont été implantées au lieu de 10 prévues au protocole et reçues de l'IITA, aucun arbuste local n'a été testé alors que quatre étaient prévus au protocole. Les essais de Cassia Siamea n'ont rien donné mais un effort aurait dû être fait pour l'implanter à nouveau puisque cet arbre est visible tout autour de l'Institut.

Essai no. 2: Culture en couloirs

Bonne persévérance puisque débutée en 1986, trois ans avant les débuts de l'AFNETA. Adaptation du protocole de recherches aux préoccupations de la vulgarisation (avec/sans mécanisation)

Les résultats obtenus à date, sur une période de 4 et 7 ans, sont clairs et les conclusions étayées: effets du Leucena sur les rendements en maïs (+20%) et coton, diminution des risques financiers pour le paysan comparativement à la fertilisation minérale en situation d'incertitude climatique, facteur clé que constitue l'évapotranspiration sur la culture du maïs, production importante et régulière de biomasse avec leucena.

En outre, la culture en couloir semble une technologie intéressante seulement à moyen terme (au bout de 5 ans).

Le choix du gliricidia, variété qui a obtenu les meilleurs resultats en termes de croissance, production de biomasse, floraison et reprise, pour des essais à mener en milieu réel, est un bon choix.

Les axes d'intervention s'articulent autour de prémisses clairs: ex: la recherche ne recommande pas une intensification élevée dans cette région (une année sur quatre en moyenne les rendements s'avérant nuls), mais plutôt de mettre l'accent sur la conservation des sols.

Bonne initiative d'avoir confié l'exploitation des resultats de cet essai à un etudiant

Essai no. 3.

Bonne tentative d'intégration de cet essai dans problématiques locales: adaptation en conséquence du protocle et créativité arachide - coton - igname - jachere plutôt que arachide - coton - maïs tel que prévu initialement.

Articulation et continuité sur un même site de deux projets finances par l'FAD

Problème clairement posé se basant sur une affirmation paysanne : "l'igname ne peut donner de bons résultats apres une autre culture, seulement apres une jachère." Mais le gliricidia seul a été testé alors que deux arbres étaient prevus au protocole Cette situation bien que justifiée dans un rapport présente certains dangers Deux paysans seulement (dont un visité) sont associés dans le cadre d'essais en milieu réel alors que 10 étaient prévus en année 1 et 20 en année 2. Cet essai n'a démarré que depuis un an avec l'accord, nous a-t'on dit, de l'unité de coordination (à vérifier)

Souci du respect de la physionomie des parcelles et modes culturaux du milieu (anacardiers, gombo). Le paysan a-t-il été réellement invité à modifier le protocole initial ? (qui a opté pour une implantation des haies selon les courbes de niveau ?)

Il aurait été préférable de ne pas mettre du tout d'engrais et de comparer les résultats des cultures avec gliricidia et des cultures traditionnelles sans arbres.

La compréhension du paysan rencontré envers les bénéfices attendus de la culture en couloirs est à éclaircir : celui-ci (et ses enfants) nous a déclaré que l'arbre c'était les engrais. N'est-ce pas plus que cela ? A-t-il visité les essais en station ?

La mise sur pied d'une équipe multidisciplinaire ne conduit pas nécessairement à une approche multidisciplinaire.

Dans le futur, une attention particuliere devra être apportée sur deux points principaux.

(1) une comparaison des temps de travaux et coûts de la culture en couloirs comparativement aux activités traditionnelles tenant compte du temps et des coûts de défrichage d'un nouveau terrain (12000 F CFA/ha) et sarclage (8000 - 12000 F CFA/ha)

(2) en matière de diffusion, le choix d'une première culture sur laquelle se verra établie l'agriculture en couloirs conduit à prendre en considération les disponibilités et les degré de risque qu'est prêt à couvrir la/les personne(s) chargée(s) principalement de cette culture (Chef de famille, enfants, épouse)

COTE - D'IVOIRE
INSTITUT DES SAVANNES (IDESSA)
(BOUAKE)

PROJET No. 2

Responsable : Monsieur Sylvestre A. Aman

La mission exprime le regret de n'avoir pu disposer du protocole original de recherche relatif à ce projet mais seulement d'un rapport presentant les résultats préliminaires obtenus après une année d'expérimentation.

Elle tient à féliciter Monsieur Aman et ses collaborateurs pour la concrétisation de ce projet de recherche personnel, original et relativement ambitieux né des réflexions menées sur le besoin ou non de friche dans les systèmes de cultures en couloirs> Elle en recommande vivement la poursuite.

Trois expérimentations étaient prevues en station (IDESSA-CDV) :

(a) l'essai de jachères améliorées étudie les interactions entre six systèmes de jachères, deux modes de défrichement de ces jachères et deux niveaux de fertilisation, le tout sur près de 2 ha, afin de developper un ou des systeme(s) de jachere amelioree à faible intrants qui permet(tent), au bout de 3 à 4 ans, la restauration et le maintien de la productivité des sols dégradés tout en augmentant le rendement des cultures ;

(b) l'essai de cultures en couloirs évalue les interactions entre deux largeurs de couloir, deux niveaux de fertilisation et trois types de bandes de haies, en vue de permettre une gestion optimale et rationnelle des ressources naturelles et favoriser une agriculture soutenable ;

(c) enfin, l'essai de comparaison de systemes de culture en couloirs continue avec des systèmes de culture intégrant une jachère améliorée étudie la gestion et la soutenabilite de la culture conventionnelle sans arbre et de la culture en couloirs à différents niveaux de fertilisation, dans des systèmes de culture continue ou intégrant une période de jachère.

L'ensemble de ce projet s'intègre dans le programme de recherche sur la "Gestion des jachères dans la modernisation agricole en Côte-d'Ivoire", adopté par le Ministère de la recherche scientifique en mars 1988. Ce programe est destiné à supporter l'action du gouvernement ivoirien qui vise, à court ou moyen terme, à arrêter l'usage abusif de la recherche constante de terres fertiles et encourager la stabilisation des cultures et la sédentarisation des paysans.

Les trois essais précités ont été mis en place et y ont été intégrés certaines composantes caractéristiques du milieu paysan telles que espèces ligneuses à usage multiple et arbres fruitiers. On a semé jusqu'ici riz et maïs

Les essais sont parfaitement tenus et étiquettés. Les six ha emblavés représentent sans doute l'un des plus grands centres de recherche en station sur la culture en couloirs qu'il nous a été donné de voir jusqu'ici.

Le tout a été réalisé avec peu de moyens techniques et financiers (15,000 US $ de l'AFNETA, + 6000 US $ d'autres sources pour le démarrage du projet) et dans des conditions que nous savons difficiles. Aucun des trois techniciens oeuvrant au sein de ce projet n'a bénéficié jusqu'ici d'un programme quelconque de formation dispensé par l'AFNETA.

La mission a relevé les im plications d'autres intervenants dans cette recherche dont Monsieur Mulongoy de l'IITA dans le cadre du "Soil Organic Matter Project"

Des essais multilocaux en milieu paysan (cultures pures ou en association : igname, maïs, gombo) seront entrepris dès l'an prochain sous reserve qu'un financement puisse être trouvé.

Bien qu'il n'appartienne pas à la mission mais à l'Unité de coordination et au Comité de pilotage d'approuver des financements complémentaires la mission verra vec l'Unite de coordination les soldes éventuellement disponibles sur les budgets des projets ACDI/CRDI et FIDA en matière de recherche terrain. Quatre projets de l'AFNETA se trouveraient dans une situation similaire. La mission examinera également s'il eut été possible de tranférer les reliquats budgétaires des projets cloturés avant échéance vers ces projets utiles et performants.

L'IDESSA mene de front deux projet de recherche avec l'AFNETA. En vue d'accroitre l'articulation, la coherence des interventions voire éventuellement d'en réduire les coûts, il est à examiner de près la réalisation d'un seul projet integrant au besoin plusieurs volets bien articulés. Le dossier de présentation de la Phase II suivra cette procédure.

La mission estime enfin qu'une clientèle cible privilégiee en vue de la diffusion de cette nouvelle technologie est à considérer : l'ensemble des travailleurs et techniciens oeuvrant sur les projets en station menés de concert avec l'AFNETA, et qui sont pour la plupart également agriculteurs, compte tenu de leur implantation dans le milieu et des connaissances acquises en matiere de techniques d'implantation/gestion et portee de la culture en couloirs.

Un compte bancaire spécial n'a pas été ouvert pour ce projet (pas plus que pour le projet IDESSA/AFNETA no 2) compte tenu des agios élevés prelevés par les banques commerciales locales. L'ensemble des "petits" projet de recherche sont regroupés dans un compte "autres conventions" et un code attribué à chacun d'entre eux.

C A M E R O U N
INSTITUT DE LA RECHERCHE ZOOTECHNIQUE
(I R Z)

Responsable: Dr Jean Kounmeniоc

(aucun document remis à la mission)

Essai no 1 : effets de l'intégration de haies de légumineuses et plantes fourragères sur la productivité et la qualité du fourrage

Problématique : divagation des petits ruminants laisses à eux-mêmes causant des dégats aux cultures et contraignant les paysans a cultiver de plus en loin. Mais combien de personnes réellement concernées par ce problème ?

Mauvais choix du site : Forte pente et érosion. Mauvais design : les haies se trouvent dans le sens de la pente et non perpendiculairement. Résultats à peine perceptibles : compétition entre leucena et plantes fourragères, hauteur de coupe irrégulière d'un arbuste à l'autre ; aucune différence de biomasse encore notée entre témoin et essai. Impossible sur ces bases de tirer des conclusions valables.

Le responsable de ce projet a bénéficié de plusieurs recommandations des coordonnateurs de l'AFNETA et de mission de supervision envoyée par celle ci. Jusqu'ici il n'en a pas été tenu compte.

Problème essentiel de management de ce projet de recherche. Une implication sérieuse et soutenue semble faire défaut.

Essai no 2 :

Effets sur la productivité des chèvres d'une alimentation complémentée par le feuillage des arbustes légumineux.

L'abri est correctement amenagé et s'inscrit bien dans le protocole prévu. 25 animaux (sur 50 prévus et budgétés) sont décédés six semaines après leur acquisition. Aucun résultat n'est donc observable.

Les protocoles ont été modifiés après un an. Les nouveaux protocoles n'ont pas été suivis. Des erreurs scientifiques ont été commises Advenant qu'effectivement l'Unité de coordination ait acceptée la réduction de moitié du nombre des animaux, on peut se demander pourquoi les budget initial n'a pas été révisé en conséquence.

C A M E R O U N

INSTITUT DE LA RECHERCHE AGRONOMIQUE
(I R A)

Responsable: Monsieur Jean TONYE

Un rapport technique (1990 - 92) étoffé et bien articulé a été remis à la mission. Les résultats obtenus jusqu'ici et les problèmes d'exécution rencontrés y sont clairement présentés. Un dossier relatif à la Phase II a également été déposé, l'accent étant mis sur l'augmentation du nombre de villages pilotes et la comparaison de l'agriculture en couloirs avec d'autres techniques agro-forestières telles que la jachère améliorée. Le rapport technique ne fait pas allusion à l'essai no 3 du projet, on y trouve cependant les principales activités et résultats dans le rapport préliminaire de la Phase II.

Un programme de stage de formation (3 jours) théorique et pratique, axé sur le concept avantages / désavantages et gestion de l'agriculture en couloirs, destiné aux 20 paysan(ne)s pilotes du projet et à 15 autres responsables de groupes d'agriculteurs a été déposé également.

Essai No 1. Etude en station de l'effet de densité de plantation de Leucaena leucocephala et du Gliricidia sepium sur la croissance, la production de biomasse, le rendement des cultures et l'amélioration de la fertilité du sol.

Lieu: Minkoameyos (station IRA)

Les essences ont été reçues de la collection de l'ITA, Ibadan. Les arbres ont été plantés à 2 mois. Le dispositif expérimental est un split-plot à 3 répétitions, portant sur 2 types d'arbres et 3 densités de plantation. Aucun produit chimique n'a été utilisé.

La méthololagie suivie est conforme à ce qui étaient prévu au protocole. Les analyses sur les 2 essences, selon la densité de plantation, ont porté sur la croissance en hauteur, diamètre et absolue, productivité, rendement en feuilles, fruits et bois, biomasse , les résultats sont disponibles. L'équipe note une bonne articulation de l'essai mené avec les pratiques culturales paysannes (système champ d'arachides, intercropping maïs-cassava-arachides). Il eut été intéressant de relever les temps de travaux, tel que prévu au protocole.

Essai no 3 : effets de différentes méthodes de gestion de la jachère en culture en couloirs avec/sans considérations animales (en station).
Essai établi en juin 1990. La décision d'abandonner le Leucaena leucocephala et Gliricidia sepium pour retenir Calandria calothyrsus est intéressante (densité 0.25 mètres).
Cette expérimentation menée avec manioc lors du passage de la mission est à poursuivre. Il n'apparaît pas évident que cet essai a été mené en confirmité avec les dispositions du protocole.

Essai no 2 : (On-farm) Influence du système traditionnel de culture sur la croissance du Leucaena leucocephala et Gliricidia sepium, dans la région forestière de Matomb (50 km au S.O de Yaoundé)

Suite aux resultats prometteurs enregistrés en station depuis 1984 et par IRA/ICRAF depuis 1980, cet essai a été conduit dès avril 1990 dans les champs de 16 paysans au sein d'une contree dont le responsable du projet est originaire et où il est bien connu. La mission relève les rapports de confiance établis avec cette population, celle-ci ayant ete clairement informée de l'objectif de la recherche participative menee et des risques encourus. Les arbres ont ete plantes juste apres la

levée des cultures. Le système cultural paysan a été maintenu. Les résultats sont mitigés, principalement parce que les sols sont relativement acides (P^H 4,8), ce qui a sans doute affecté la levée des essences. La situation doit être rapidement corrigée. L'analyse des résultats a porté sur la levée et taille des arbres et celles des cultures dominantes (igname, arachide). L'effet de la culture dominante sur la levée et la taille des arbres a également été étudiée. La meilleure levée a été obtenue en semant Gliricidia S. dans les champs d'ignames. Les plants de Leucaena ont été attaqués par les sauterelles vertes dès la levée. La croissance rapide du manioc a eu un effet compétitif sur la croissance des arbres, problème soulevé par bon nonbre de paysans. Des correction ont été apportées dès 1991 (culture en couloirs dans champs d'arachide ou a 1 mètre au moins des plants de manioc). Les paysan(ne)s rencontrés connaissent le but visé par la culture en couloirs particulièrement en matière de fertilité des sols. Pour 46% d'entre eux, la gestion des arbres n'est pas encore suffisamment maîtrisée. En 3e année, 1/3 des fermiers avaient renoncé à poursuivre l'expérimentation menée

Le responsable du projet soulève certaines difficultés financières rencontrées , délais (jusqu'à 2 mois) entre réception du chèque AFNETA et encaissement effectif, chèque libellé en $ U.S. et non en C.F.A. Coût élevé de la recherche en milieu paysan. Une solution proposée est d'envoyer les sommes à la station IITA/ Yaoundé.

La fertilité des sols et les aspects économiques n'ont pas encore été suivis. Le projet est bien implanté à l'IRA. La mission a eu le privilège de rencontrer à deux reprises Monsieur le Ministre de la recherche scientifique du Cameroun, également Directeur de l'IRA. Ce dernier a soulevé les problèmes de déplacements rencontrés, la nécessité d'une

bonne articulation entre les 2 projets IRA/IRZ menés avec l'AFNETA et l'importance de publier et de disposer de fiches techniques

Forte collaboration de ce projet avec celui de ICRAF/NCRE et souci d'éviter les duplications.

La mission a eu l'occasion également :

a) de visiter les expéences de culture en couloirs menées par ICRAF/NCRE avec 25 paysans. Ces derniers sont très satisfaits et de la collaboration reçue et des résultats obtenus,

b) de rencontrer le Président, certains responsables et membres de la Fédération des groupments agricoles de Matomb. La plupart des questions posées à la mission étaient claires et fondamentales (le sol sera-t-il amélioré avec les arbres et pour combien de temps ? pourquoi les arbres ont-ils bien poussé dans certaines parcelles et moins bien dans d'autres ? faut-il implanter la culture en couloirs dans les champs où les récoltes sont généralement bonnes ou dans ceux où les résultats sont moins bons ...)

ANNEX

KENYA

AFNETA is supporting Alley Farming research in four collaborating institutions in KENYA. The support is provided for four major experiments on-station supplemented by a number of on-farm initiatives, one of which is to be directly supported by AFNETA and is scheduled to begin soon, after on-farm studies underway are completed before the end of the year

Brief Overview

The mission was first received by the Director of KEFRI, Dr. J. Odera and other scientists participating in the AFNETA-supported research Drs. D. Nyamai, (Pricipal Scientist/Agrforester), A. Esilaba (Soil Scientist), N. odongo (Animal Scientist) and P. Ongugo (Socio-economist). The meeting provided the mission with a good overview of the institutional set-up and various linkages with collaborating institutions, notably with the Kenya Agricultural Research Institute (KARI) and among the IARCs, the International Centre for Research on AgroForestry (ICRAF), mainly through its AFRENA network trials and training manuals and technical assistance in Design and Diagnostic Surveys.

A formal visit was made to ICRAF Headquarters where the mission met with the Director-General Dr. P. Sanchez, Dr. Bruce Scott, Deputy Director-General and Mrs. Esther Zulberti. The meeting was very useful in providing an overview of the Centre's role in the network thus far, which had mainly been in the context of training, curricula development and participation in steering committee and AGM Meetings - the last of which was convened with strong involvement of the Centre. Several issues regarding the direction the Network was embarking on, were discussed. It was highlighted that since the proto-type technology was already available, it was time for a synthesis of the experience of all the IARCs involved in seeking indications of the relevance and adoptability of the system. While it was known a priori that alley farming was often technically a difficult package to apply under on-farm conditions, in sociological terms it seems even more difficult to ascertain acceptability. There is sufficient indication that it is economically and technically robust, although this is true of very specific niches, with particular conditions conducive to farmer-adoptability - in the main these were cited to be high labour availability, low labour opportunity cost and secure land tenure.

There were very few situations in Africa where all three conditions coexist.

ICRAF assured the mission that it continues to strive to find these unique environments while promoting Alley farming (hedgerow intercropping in ICRAF terminology) research and it was ready to strengthen its involvement in AFNETA further, as a member of the Foundation IARCs. It would use AFRENA trials to provide stronger input in MPTS species selection with a focus on traditional use, management regimes, and soil conservation/fertility management properties. It has already made its data base on cross-ecozonal analysis to AFNETA and is prepared to provide further site-specific assistance in conducting D&D surveys as part of Participatory Rural Appraisal which was highlighted to be the only way forward, if a serious attempt to assess AF adoptability is the objective. The mission endorses this fully.

Perhaps the best attempts at socio-economic work which the mission encountered during its country field trips were in Kenya. The KEFRI socio-economist has made a commendable effort to put together a set of location-specific parameters which would reveal the economic viability of the alley farming system (in the environs of Muguga). He is carrying out on-farm studies in order to test and evaluate AF as a viable technology in trials which seek to adapt the prototype in an environment akin to farmer-conditions. This is being replicated in farmer fields which have yet to be monitored to discern input/output cost/benefit relationships and profitability. Preliminary results of the initiative indicate some successful adoption of alley-farming or variants thereof.

The mission confirmed this on its visits to farmers fields in four different, widely dispersed locations. At present thse farmers are few and far between and further analysis needs to be done on what are the specific requirements of the farmer which he/she perceives alley farming to meet. For instance, the researchers had not yet been able to determne that most of the farm enterprises in the region were driven by livestock feed requirements and soil fertility was not perceived to be an immediate problem needing attention, although in the sloping lands of the bimodal Highlands of Kenya this a real problem bound to become pronounced in the near future. The mission was informed that D&D methodology is being applied to start an exploratory on-farm experiment which will address the whole farm situation.

It was also heartening to see that the Socio-Economist at KARI/ILCA in Mtwapa had made an effort to put together gross

benefit figures for a typical alley farming plot of one hectare using two heads of cattle (cows). A chart prepared by the Mtwapa Centre showing the economics of the system is attached. The mission has assisted in supplementing the analysis with cost figures in order to derive profitability of the system as depicted by the farm model. The results are very revealing and suggest the need for linking with development/extension efforts to establish adoptability of the system by farmers. This would be crucial especially as a number of issues such as capital availability for cow purchase and zero-grazing unit, and animal health (lethal east coast fever) need to be resolved and may become impediments in a developmental context. However, the better endowed farmers visted by the mission had already adopted the system and were reaping remunerative benefits from it. These farmers were unfortunately not typical, in the region and showed unusual attributes of pioneership, dilligence, hard work, innovative skills and initiative.

Attached is a brief description of the experiments visited and their preliminary results.

There were two experiments earmarked for KEFRI, under the principal scientist Dr. Daniel Nyamai. The mission visited the first one and was also taken to a number of farmer -managed trials, some of which were based on the system being assessed in Experiment I. Experiment II is planned to begin in the last quarter of 1992, as sheduled .

Experiment 1	Determination of optimal mulch to feed harvest ratio appropriate for management of alley farming On-station; field experiment
Experiment 2	Exploratory on-farm testing of alley farming for integrated soil fertility management and livestock feed On-farm testing of alley farming for integrated soil fertility management
and	livestock feed On-farm - farmer managed
IMPLEMENTATION SCHEDULE	1990 - Establish experiment 1 1992/93 - Establish experiment 2

According to the Scientists the on-station and on-farm experiments were designed to evaluate the biological feasibility, economic viability and soil acceptability of alley farming. The on-station trial was established to determine the effects of various management options to optimize the ratio of mulch application and biomass removal for supplementary livestock feed. Calliandra Calothyrsus and Leucaena leucocephala were planted in hedgerows spaced at 4.0 m by 0.5 m and coppiced at 0.5 at five mulching rates/feeding ration (0.25, 50, 75 and 100%) using maize as the test crop in a split plot design. Calliandra produces significantly ($P<0.05$) higher biomass (15 t/ha) as compared to 6.5 t/ha for Leucaena. However, for both species treatments which received greater than 50% green manure applied in the soil had significantly higher maize yield . Similarly significant linear relationship were obtained between rate of mulch application and soil organic C and N. Results on livestock performance were very preliminary but revealed that the supplementary feeding of Lucaena leaves in the animal diet, by replacing 50% of the primary feed made no difference to the quality and quantity of milk produced and the high protein content of the species was evident.

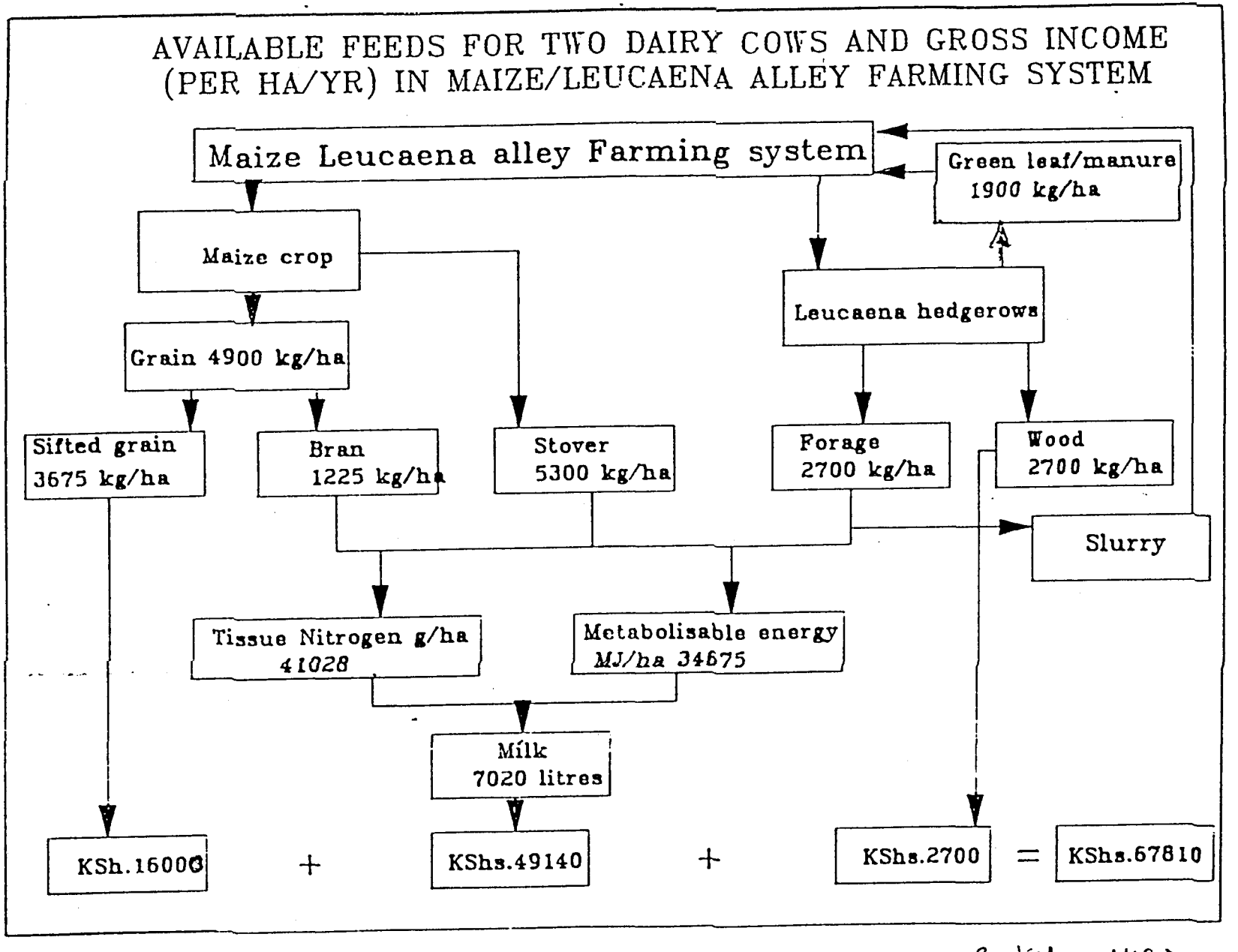
The mission also visited Mtwapa in the vicinity of Mombasa where two experiments are being conducted based on the alley farming system for fodder and food production

Experiment 1

Fodder production based on *pennisetum piopiorious var.* Bana and *Leucaena leococephala var.* K28 hedgerows in an alley farming system.

The experiment was laid down in April 1989 soon after the onset of the long rains. Leucaena was planted in hedgerows with a 5m inter-row and 25cm intra-row spacing. Four rows of Napier grass, spaced 1 x o.5m, were planted in between the hedgerows. After 12 months of growth leucaena was cut back to a 50cm stump height and all the other treatments applied, including Clitoria tonata planted at the rate of 4kg/ha between Nappier rows on 30.4.90. Slurry was applied at the rate of 55 t/ha per application at the begining of the long rains in May and short rains in October. The mission considered this rate of application to be too high in the context of what a farmer might be able to apply.

Two havesting management treatments for Nappier and Leucaena were compared. They were harvesting both fodders when Nappier grass was 1 m or 1.5 m tall. At the two heights Nappier was cut 10 and 30 cm from the ground respectively. The experiment was planted in a ramdomized complete block design with three replications. The treatments were combined in a factorial arrangement. By June 1992 results for four harvests were available and proved promising. However, they have not always emulated the on-farm situation and it is heartening to see an effort to link up with extension projects, notably the National Dairy Development Project. The Regional director for KARI responsible for the trials is also a member of the Project task force of the IFAD Kwale Kilifi project and strong linkages are expected to be made if IFAD initiates the required reallocation of resources under the project for some adaptive research.



Costs.

Labour -

Zero-grazing unit -

Cows -

Seeds.

100 kg N = 1000 kg 10-18-18

30 Ksh = 1 USD

UGANDA TRIP REPORT

The team visited Uganda where there is an on-going AFNETA project based at Makerere University under the supervision of Dr. John Aluma.

Courtesy Calls

The team met with the Dean, Faculty of Agriculture, Makerere University, Prof. Mugerwa who traced the history of the University since its establishment in 1992. He spoke of research funding problems of the University and stressed that about 11,000ha of forest is being depleted annually in the country. Due to forest exploitation for fuelwood and timber, there is now a deliberate government policy of tree planting assisted by NGOs. Research programs are now being developed aimed at reforestation. The University has introduced undergraduate teaching in agro-forestry and post-graduate programmes are being planned.

The research system in the country has been reorganized with the establishment of a semi-autonomous National Agricultural Research Organization (NARO) which has six affiliated research institutes with Makerere University as an associate member.

The team also met with Mr. D.Z. Dukki of CARE, Uganda. CARE, he said was working with the University, ICRAF and CIAT with the aim of closer collaboration with agro-forestry researchers. CARE has made contact with farmers through on-farm research in the north-west and south-west Uganda and is investing in a project in the Ushin Province. Another agro-forestry project is in the planning stage and will be located at the Queen Elizabeth National Park within the fishing villages. Leucaena

has been found to be good for fuelwood and farmers have realized some changes in their crops and an increase in milk production.

Mr. Byamah, Assistant Commissioner for Forestry explained the operation of the Farm Forestry Research Programme which was executed by CARE with a DANIDA grant. The project which operated in three districts in and around Kampala has been terminated but there are hopes that another DANIDA project will soon start.

The approach was to organize women into groups that will start tree nurseries, engage in bee keeping and production of hadicrafts. The project provided free initial inputs including pangas, watering cans, spades, etc. The women proved very receptive and they started production and marketing of tree seedlings and zero grazing of planted leucaena.

Research Programs

Five on-station experiments to demonstrate the potential of alley farming as an agro-forestry technology were planned for Uganda. These were:

1. MPT screening for continuous monitoring involving ten species.
2. MPTs in alley farming set-up with beans and maize.
3. Comparison of Leucaena leucocephala and Gliricida sepium in typical alley farming set-up with beans and maize using 2,4 and 6m spacing.
4. Comparison of Leucaena leucocephala and Cassia siamea spacing and pruning trials in banana for fuelwood/pole production and soil fertility improvement.
5. Same as (4) but with fertilizer as additional factor.

Comments on experiments

— Experiment 1 was established at Kabanyolo in April 1990 and replanted in Namulonge together with Experiments 2 and 4 in October/November 1991 and Experiment 3 in April 1991. Experiment 5 was not established due to land preparation problems and in the case of Experiment 4 only Leucaena was planted leaving out Cassia siamea. It is difficult to accept the reason given for non-establishment of the trial considering the fact that the project has some labourers on its payroll.

— At the start, seeds were planted at stake and germination was very poor. This undoubtedly resulted in much time being lost since the coordination office had to supply a new batch of seeds. In areas where there is the possibility of irregular rainfall and the threat from browsing animals, it is better to raise seedlings for the establishment of the trials rather than plant at stake.

— Considerable damage was done to the young plants by browsing animals and it was necessary to protect the plots. However, it is very doubtful whether the wire fence that has been erected will be effective in keeping out the animals.

— The trial on the management of MPTs in bananas was being satisfactorily executed and one could clearly see the benefit of the trees for the banana. Sesbania was the best for pole production

— The trees in the alley cropping trial were sparse and growth was generally poor. It is therefore unlikely that any useful result will be derived from the study.

— A socio-economist has been trained under AFNETA to initiate studies but she has not yet commenced work with the project. It is

hoped that she will start work before long as there is much work to be done in this area.

On-Farm Trials

The AFNETA project does not undertake any on-farm work. However, the team visited sites established under the Forestry Rehabilitation project of the Forestry Department in the Mpiji District. The group saw a female farmer growing leucaena which she fed to her cattle. In another village, tree seedlings were being raised by a lady for sale.

In the Mubende District, Action Aid has been active in promoting alley farming using leucaena in banana plots. One lady had established leucaena hedgerows in her entire banana plot and has been using the foliage to feed cattle, mulch the banana while the poles were taken home for cooking. The droppings from the cattle was returned to the farm as manure. she had been able to influence two of her neighbours to try the technology.

It was clear from the farm visits that alley farming has the potential for the production of mulch, fodder, firewood and poles at farm level in Uganda. However, there does not seem to have been much interaction between the AFNETA research team and farmers who are being introduced to the technology.

Projects in Malawi

1.00 There are two projects in Malawi, one with Bunda College of the University of Malawi (BC) and one with the Tobacco Research Institute of Malawi (TRIM). These two on-station sites are but a few kilometres apart on the Lilongwe plain and are adjacent to Chitedze Research Station. This is the headquarters of the agroforestry commodity team and they have National responsibility for research and development. All three stations have alley cropping trials. This situation poses some problems.

2.00 The Lilongwe plain is a relatively small geographical area with soils of high fertility status (Eutric fersialic group in the Malawi classification). Rainfall ranges from about 700mm to 900mm over this densely populated area. More typical for the farmers of Malawi are poorer soils on the sloping land of the African Rift system. It is very difficult to perceive a rationale for three discrete sets of alley cropping trials so close. An argument for developing sites in the AFNETA system as a training exercise is dubious for the AFNETA professionals can so easily relate to the work at Chitedze and also receive technical support from an AFRENA staffer based there. The environment so atypical of most farmers in the country suggests that some agroforestry work should be placed elsewhere.

3.00 The BC and TRIM groups are not abreast of events. Through the National Agroforestry Committee national recommendations for alley cropping and other agroforestry technologies have been developed, based upon tree screening at many sites and previous extension efforts. A renewed extension effort is now underway and it is surely in support of this on-farm activity that BC and TRIM could best serve their farmer clients.

4.00 The AFRENA project has a developing on-farm activity and other alley cropping work includes a major initiative in an EC investment project towards Salima by the lakeshore. As both AFNETA groups have membership on the National Agroforestry Committee it is surely possible for everyone to meet to conceptualise and agree a role for the BC and TRIM groups. An investment project such as the one described should be able to welcome expertise and provide funding for their involvement.

5.00 The BC and TRIM work is production of foodcrops and/or tobacco using Leucaena. The systems are designed to permit post rainy season growth of trees, and the use of prunings as incorporated manure prior to planting for the next rains. This approach may not suit the free grazing in the dry season, and also the heavy termite attacks upon Leaucaena reported. Low farm gate prices for maize and other crops grown suggest that alley cropping as conceived may be uneconomic. Fuelwood prices are very high and an approach based upon a fast growing woody species with wood of good burning quality and leaves of low palatibility is one alternative approach to discuss with farmers.

6.00 Both groups have objectives related to an addressing of soil fertility decline but have their experiments on some of the best soils of Malawi.

7.00 In general there is need for better conceptualization and design. Any new projects should be preceded by thorough rural appraisal and be based with farmers in the first

instance so that problems can be properly identified in situ and rectified either on site or, if appropriate, by supporting on-station work.

8.00 For the future it would seem sensible that the discrete groups collaborate more strongly with the mainstream units and also establish project partnerships with extensionists and farmers.

Bunda College (BC)

1.00 There are three experiments in the protocol:

- Experiment one is designed to address soil fertility decline and to evaluate the performance of leucaena/pigeon pea prunings to improve maize/legume production
- Experiment two is a tree sceening experiment
- Experiment three is On-Farm research

2.00 Experiment one is in place on some sloping land owned by government in an isolated highland setting near Dedza, and the group have shown commendable initiative in moving to sloping land. The protocol was modified to include Glyricidia sepium instead of Cajanus cajan. Established in 1990 the trial has no significant yield results to date. Both trees are under stress in this environment, and in July of this year had very little leaf. Glyricidia had marked tip end dieback. Though this years rains have been poor it is predictable that both species are unsuited to the site and technology, for it is certain that very little leaf would be available as manure immediately before the onset of the rains. Leucaena diversifolia might be tried as a replacement for Leaucaena leucocephala but as this site is relatively unrepresentative of Malawi conditions and disassociated from farmer involvement it seems timely to terminate the experiment.

3.00 Nine species have been planted and there are two accessions for each of Gliricidia sepium and Albizia lebbeck. Two species are well established as alley cropping trees. Four more species are predictable as unsuited to alley cropping because of thorns or because they cannot stand up to regular pruning. Effectively the screening trial has three potential species, each with a single accession. This experiment is not a well designed screening trial.

4.00 The on-farm experiment has not been started and no rationale was given for this. It would seem appropriate to claw back that portion of the finance intended for this work.

5.00 The BC team continue to run a six year old trial to examine yield under alley cropping using different tree crop ratios. The six years of yield data show useful trends and this information could be introduced and discussed in the AFNETAN.

6.00 A further experiment has been established on-station to examine yield response to 5 and 10 tonne applications of prunings and also to fertilizers. It may be difficult for farmers to apply single applications of ten t/ha. Yield data for two seasons are available.

7.00 There is need to rationalise about what data is being collected and for what purpose. Useful information that would help us understand the economics of these systems could be collected but is not. Data such as grain size, harvest index and abundant soil data is being collected to no purpose for it is not being used. Expenditure on soil analysis has taken up approximately 25% of project expenditure and labour costs 50%. The soil analytical data is questionable and not reported according to acceptable conventions or standards. The situation vis a vis labour is debatable but it may be that limited project funds should be allocated on the basis that all institutions can provide labour.

Tobacco Research Institute of Malawi

1.00 There are two experiments in the protocol:

- Experiment one studies soil fertility maintenance and appropriate alley width
- Experiment two studies short fallow rotations and prospects for obtaining tobacco and wood from a single plot.

2.00 The experiments are well established by the principal investigator and are producing data.

3.00 There is no real reason why a modified form of these experiments should not have been undertaken elsewhere, preferably on a farmers field. Three advantages are exampled:

- a major area for operations of TRIM is the area of the Kasungu tobacco schemes, a different agro-ecological zone with different soils and morphological conditions.
- prunings were being obtained by hand pulling of fresh leaves from branches. This is very labour intensive and many farmers would have quickly advised a drying period to allow for leaf-fall.
- losses of woody materials from site occur. This is somewhat similar to the disruption of experiments by animals in Uganda. In both cases placing the experiments with keen farmers would likely have provided better security.

4.00 This case is somewhat similar to BC in that considerable soil data has been collected but not used because no clear purpose for the information has been established. In these cultivated soils it is predictable that much of the short term positive effect of prunings will be due to improved nitrogen supply. It does not make much sense therefore to apply resources in analysing micronutrients in the first instance, especially when the quality of soil data cannot be assured. Soil analysis for Chitedze, BC and Trim is done in separate laboratories and it has been pointed out that some of the data seen is unsatisfactory. The Labex analytical comparison exercise based on Wageningen showed the need for reference samples and inter-laboratory comparisons to help explain/remove the enormous inter-laboratory variations commonly found for specific analyses.

APPENDIX 20

1. CANADA

1.1 Agence canadienne de developpement international (ACDI)

Mme Ginette Lachance, directrice de programmes Afrique et Moyen-Orient

Mme Louise Lesage, charge de projet

Mme Suzanne Moreau, Agent principal de ressources (APR)

1.2 Centre de recherches pour le developpement international (CRDI)

Mme Mary C. Beaussart, project officer, Canadian collaborative program agriculture, food and nutrition

M. Saïdou Koala, administrateur de programme principal, systèmes de production végétale, Bureau régional du CRDI pour l'Afrique centrale et occidentale (Dakar)

2. NIGERIA

2.1 AFNETA

Dr A. Koglevi	Chairman, Steering Committee
Dr Kwesi Atta-Krah	Coordinator, AFNETA
Dr N. Sanginga	Assistant Coordinator AFNETA

2.2 IITA

Dr Lukas Brader	Director General
Dr J.P. Eckebil	Deputy Director General, International Cooperation Program
Dr D.S.C. Spencer	Director, Resource & Crop Management Program
Dr H. Gasser	Director, Training Program
Mr D. Governey	Director, Budget and Finance
Dr B.T. Kang	Soil Scientist

Dr M. Swift	Leader, Forestry Humid Group
Dr A.P. Uriyo	Head, Project Development Unit
Dr Mulongoy	Soil Microbiologist
Dr S.S. Jagtap	Climatologist
Mr O.A. Osinubi	Group Training Unit
Dr Hadzi Yawo Nevame	Projet national petit elevage (Togo)
Dr Christian Strutz	Chief technical adviser

2.3 ILCA

Dr J.W. Smith	Animal Scientist
Dr A. Larbi	Forage Agronomist

2.4 ICRAF

Dr D.O. Ladipo	ICRAF Scientist

2.5 RIVERS STATE UNIVERSITY OF SCIENCE TECHNOLOGY, PORT HARCOURT

Prof (Mrs) Mildred A. Amabiri	Principal Investigator, Forest Microbiologist
Prof M.S. Igben	Agric. Economist
Mr B. Ekeke	Silviculturist
Miss B. Kpelo	Postgraduate student
Mr E.C. Orji	Postgraduate student
Mr S. Dagogo	Technologist

2.6 IITA EXPERIMENTAL STATION, ONNE, PORT HARCOURT

Dr N. Gichuru	Soil Scientist
Mr L. Gbadebo Owoeye	Senior Research Supervisor

2.7 IMO/ABIA AGRIC. DEVELOPMENT PROJECT

Mr. M Onyeali	Program Manager
Mr Tobias Echebiri	Chief, Agric. Technical Services
Nze Chris Ejikeme	Chief Research Officer, i/c AFNETA
Mr A.O. Meregini	Michael Okpara College, i/c AFNETA
Dr O. Okpara-Nnadi	Abia State University, Soil Physicist

3. BENIN

3.1	Mr Anatole c. Sogbohossou	Chef de cabinte, Ministère du développement rural
3.2	Dr Moise Houssou	Director of DRA
	Dr M. Ehounssou	Zootechnicien, URZV
	Mme Yacoubou Zensbou	Forester, URF
	Mr Dah Dovonon	Forester, URZV
	Mr Valentine Koudokpon	Agronomist, DRA
	Mr Aihou Kouessi	Agronomist SRCV
	Mr Isidore Gbego	Animal Scientist
	Mr Jean Yaoitcha	Student, Animal Production
	Mr Albert C Eteka	Assistant de recherche IITA

3.2.1 FIELD VISITS

DRA/URZV	Agonkanmey
IITA Station	Calavi
DRA	Niaouli
HINVI	

	Province of Mono	i.	Lokossa
		ii.	Zouzouvoc

4. GHANA

4.1 SPECIAL

Mr Ibrahim Adams	Secretary of Agriculture, Ministry of Agriculture
Prof Dr Ing. F.O. Kwami	Vice Chancellor, University of Science and Technology, Kumasi

4.2 INSTITUTE OF RENEWABLE NATURAL RESOURCES

Mr J.G.K. Owusu	Ag. Director
Dr Francis Ulzen-Appiah	Soil Scientist
Mr E.L.K. Osajo	Animal Nutritionist
S.K. Oppong	Range Management/Soil Science

4.3 FORESTRY RESEARCH INSTITUTE OF GHANA

Mr A. Ofosu-Asiedu	Director
Mr S.P.K. Britwum	Deputy Director
Dr J. Cobbina	Head, Rural Forestry

4.4 NYANKPALA AGRIC. EXPERIMENTAL STATION

H. Mercer-Quarshie	Station Manager
J.J. Afuakwa	Agronomist
C.J. Osei	Agronomist
L.O. Tetebo	Agronomist
A.L. Nyamelaye	Soil Scientist
C.N. Kasei	Admin. Officer
Jens Von Borgen	Liaison Officer, GTZ

4.5 CROP SERVICES DEPARTMENT, MINISTRY OF AGRICULTURE, ACCRA

Dr Francis Ofori	Director, Crop Services Dept.
Mr S.Y. Anane	Director, Agroforestry Program
Mr Jacob Wumnaye	Director, Extension Services
Mr Franklin Donkoa	Deputy Director, Extension Services

4.6 UPPER EAST REGION

L.A. Nyamekye	Soil Scientist
Tachie-Abiem	Principal Technical Officer

4.7 YENSI VALLEY - GHANA RURAL RECONSTRUCTION MOVEMENT

David Owusu	Field Director (Agroforestry)
Alex K Bwah	General Secretary

5. IVORY COAST

Koffi Goli	Director General
Felix Coulibaly	Deputy Director General
Dr Sekou Doumbia	Cropping System Specialist
Dr Sylvestre Aman	Soil Scientist
Zana Ouattara	Animal Scientist
Bodji Ngnessan	Animal Scientist
Zoumana Coulibaly	Animal Scientist
Dr Yesso	Veterinarian
Nguessan Ndri	Research Assistant
Koussi Breuno	Field Assistant
Outtara Soungolo	Field Assistant

5.2 DABAKALA IDESSA

Konate Dramane	Horticulturist
Krah	Root & Tuber
Kone Doffangui	Agroclimatologist
Acle	Entomologist
N'Guessan Amani Antoine	Agropastoralist (Technicien)
Zohouni Goli	Phytopathologist
Ouattara Peyogoni	Crop System Technician
Koffi Yao Pierre	Crop System Technician
Fane Zoumana	Head, Extension Unit
Gnapa Charles	Accountant
Tano Kambo	Zonal Head

6. CAMEROON

6.1 MINISTRY OF SCIENTIFIC RESEARCH & TECHNOLOGY

Dr Jacob A. Ayuk Takem	Hon. Minister Director, Scientific Research & Technology

6.2 Prof Prine Nwel Titi	Anthropologist
Dr Jean Tonye	AFNETA Project Leader
Dr Joseph Bakala	Chef de Centre de Recherches Agronomiques
Kolokosso à Bediang	Agronomist
François a. Moneze	IRA/CRA AFNETA
Joseph T. Bindzi	DA/IRA

6.3 IRZ

Dr jean Kouommenioc	AFNETA Project Leader
Mr Ngwa Asanji Thomas	Animal Scientist

6.4 ICRAF

Dr D. Duguma

7. KENYA

7.1 KENYA FORESTRY RESEARCH INSTITUTE

Dr J.A. Odara	Director, KEFRI
Mr P. Ongugu	Socioeconomist
Miss J. Wanjinu	Agroforestry
Miss P. Karinga	Pathologist
Mr J. Nzuguna	Research Forester
Dr D. Nyamai	Agronomist/Forester

7.2 KENYA AGRICULTURAL RESEARCH INSTITUTE

Dr A. Esilaba	Soil Scientist
Mr N. Odongo	Animal Scientist
Mr D.M. Mwangi	Pasture Agronomist
Mr Michael N'Njunie	Forage Agronomist
Mr Ali Ramadhani	Forage Agronomist
Mr Erastus Kiruiro	Animal Nutritionist
Mr Samuel Gichuki	Root & Tuber Agronomist
Mr Hamedi M. Saha	Maize Agronomist
Mr Salim Mirakanga	Dairy Officer, Ministry of Livestock Development
Mr Malinga Kirui	Regional Director

7.3 ILCA

Dr Len Reynolds	Animal Scientist
Dr G. Mullins	Socio-economist

8. UGANDA

8.1	Prof J.S. Mugarwa	Dean of Agriculture, Makere University
	Dr J.R.W. Aluma	Forestry, Makere University
	Ms M. Najjingo-Kasujja	Socio-economist, Makere University
	Mr Isa B. Sebalye	Principal Technicia, Makere University
	Mr Nelson Wajja Musukwa	Agronomist Namulonge Research Station.
	Mr D.Z. Dutki	CARE
	Mr J.B. Byamah	Assistant Commissioner for Forestry
	Mr John Muttee	District Forestry Officer, Mpigi District
	Mr Kenneth Opiro	Forestry Officer, Mpigi District
	Mr Joseph O.B.-Emute	District Forestry Officer, Mubanbe District
	Mr E. Karuhogo	Forestry Officer (Extension), Mityana
	Mr R. Lubega	Forest Guard, Mityana

9. MALAWI

9.1	Dr Z. Kasomekera	Principal Bunda College, University of Malawi
	Dr G.M. Chapola	General Manager, Tobacco Research Institute
	Dr M. Kwapata	Horticulturist, Bunda College
	Dr N. Saka	Plant Pathologist/Nematologist, Bunda College
	Dr Ommar Itimu	Ag. Head, Forestry Unit, Chitedze Research Station
	Mr Newton Kalengamaliro	Agronomist, Tobacco Research Institute
	Mr Raiford Banda	Agronomist, Tobacco Research Station
	Mr D. Nothole	Socio-economist, Bunda College
	Dr (Miss) Susan Minae	ICRAF-On-farm research Coordinator

Mr Raiford Banda	Agronomist, Tobacco Research Station
Mr D. Nothole	Socio-economist, Bunda College
Dr (Miss) Susan Minae	ICRAF-Co-farm research Coordinator

10. DISCUSSION WITH FARMERS (FARMERS VISITED)

10.1. *Nigeria*

1.	Mr. Samuel Bamigbade	Alabata village, Oyo State, Nigeria
2.	Mr. Emmanuel Adesina	"
3.	Mrs. Alabi	"
4.	Alhaji Wahab	"
5.	Mr. Adeleke	"
6.	Linus Okorie (Coordinator)	Umuagu Aguneze Ahiara Mbaise
7.	Hyacinth Ayozie	village, Imo State, Nigeria
8.	Chief Louis Nwokojie	"
9.	Chief Fabian Akponye	"
10.	Umuanwangagwu family	"
11.	Umuopara family	"
12.	Ihenaebonna Okeke	"
13.	Joseph Onuoha	"
14.	Akwukwaegbu Ibe	"
15.	Barnabas Amaechi	"
16.	Christopher Edom	"
17.	Ejerenwa Okeke	"
18.	Geoffery Iwuagwu	"
19.	Fred Opara	"
20.	Nze Laserian Anyanwu Dulu (Community Leader)	"

10.2 *Benin*

Mr. Dekdo Codjovi
Mr. Doto Gamefioh
Mr. Ganiou Edou

10.3. *Ghana*

Thomas Obeng	Asempaneye village
John Atibila	Kakasule village (Bawku)
Saforu Ashante	Bewase
Alte Mohammed	Kokormu village
Madam Okyerewa	

10.4. *Côte d'Ivoire*

Porfor Coulibaly

10.4. *Cameroon*

Theodore Noah Nke	Nkolfeb village
Bartholomew	"
Robert Etaba	"
Gaston.Ngono	"
Bessala	Nkometou village
Asanji T.	"
Mme Alexis	Matomb: Nkenlikog village
Mme Magarite	"
Mme Song Bahang	"
Mr. Patrice Liyuk	"

Federation of Agric. Union Fegaisan

Michel Biyong	-	President
Jerome Bayi	-	Member
Basile Mbondo	-	"
Adolphe Ndjoy		"
Gregoire Tam		"
Paul Bayiha		"
Joseph Jack		"
Joseph Mbarga		"
Theodore Bityuong		"
Marc Ndjoy Mbilla		"
Mme Marie Biyong		"
Adolphe Yeh		"

FARMERS

10.5. *Kenya*

Mrs. Salome Wanjiru Njuguna, Kiambu District

Mr. Samuel Githachuri, "

Mr. Joseph Karuiki	"
Katana Masha	Mtwapa Settlement Scheme, Bomani Kifreme
Donald Mwenia	"
Ibrahim Ngoa	"
Juma Ibrahim	"

10.6. *Uganda*

Mrs. Gladys Kasule
Mrs. Immaculattee Ssemwanga
Mrs. Victo Mubiru
Mrs. Betsy Kasirye, Chairperson, Makulu Women Group, Mpigi
Mrs. Nalongo Budu, Mpigi
Mrs. Amina Kagwa, Tula Kyadando, Mpigi

NGOs VISITED

11.1 *Ghana*

Rural Forestry Division of Forestry Department
Ghana Rural Reconstruction Movement (Yensi Valley)
Agroforestry Unit
Adrucon Project (Africa 2000 Network/UNDP)

11.2. *Uganda*

CARE

APPENDIX 21

BIBLIOGRAPHY

ACDI Réseau de recherches sur l'agriculture en couloirs, document de travail préliminaire à l'élaboration d'un MAP, J.Y Lalande, février 1988

ACDI Réseau de recherches sur l'agriculture en couloirs, MAP, 28 avril 1988

ACDI Accord de contribution ACDI—CRDI, 20 septembre 1988

ACDI Projet AFNETA, bilan des activités 1989—1990, rapport de mission, L. Fournier et S. Mbodji, décembre 1991

ACDI Projet AFNETA, rapport synthèse du bilan des activités, L. Fournier et J.Y. Lalande, décembre 1991

ACDI Rapport d'analyse des dossiers du projet Réseau de recherches sur l'agriculture en couloirs, M. Faye, mai 1990

ACDI AFNETA: 3e AG annuelle des membres du réseau de recherche sur l'agriculture en couloirs, rapport S. Moreau, APR

ACDI Rapport de mission au Nigéria, Togo, Bénin du 1 au 7 février 1992 L. Lesage—S. Moreau, 10 mars 1992

ACDI Standards d'évaluation des projets bilatéraux (1990), janvier 1991

ACDI Gestion des évaluation des projets bilatéraux (1991)

AFNETA First annual technical report, February 1989—January 1990, 20 February 1990.

AFNETA Second annual technical report, February 1990—March 1991, 20 May 1991.

AFNETA Phase I report (1989—1992) 15 June 1992

AFNETA Standard methodologies and designs for AFNETA collaborative research (1989—1992), June 1992

AFNETA Structure, programs and operations

AFNETA Data collection procedures, technical report I

AFNETA List of collaborative scientists and institutions

AFNETA Curriculum for alley farming regional training course

AFNETA Regional training course in research methods for alley farming, KEFRI, Nairobi, Kenya, 17—28/9/90

AFNETA idem, 2—13/9/91

AFNETA Research protocols of AFNETA/NARS projects to be visited during mid-term evaluation of the network: 15 July—20 August 1992

AFNETA Mid-term project evaluation, Terms of reference

AFNETA Workplan for 1990, 1991

AFNETA Collaborative research on alley farming in tropical Africa, N. Sanginga—A.N. Atta-Krah—A.P. Uriyo, Meeting of NARS directors (southern and eastern African countries) ICRAF, Nairobi, Kenya, 27—28 May 1991

AFNETA Meeting report (series 1991/1). AFNETA collaboration with National research institutions, Report of the meeting of

directors of NARS (West and Central Africa). IITA, Ibadan, Nigeria, 18—19 March 1991

AFNETA The state of the AFNETA union and directions for the future, A.N. Atta-Krah—N. Sanginga, 3rd annual general membership meeting of AFNETA, ICRAF, Nairobi, Kenya, 27—31 Jan. 92

ICRAF Strategic plan

IFAD Technical assistance financing agreement, T.A. Grant 190—IITA re: collaborative alley farming research network support of in-country research

IFAD Presentation at closing of AFNETA third annual general membership meeting, 31 January 1992

IFAD Supervision mission reports S. Mathur (1989) and J. Russel (1990, 1992)

IITA/ILCA Réseau de recherche sur l'agriculture en couloirs pour l'Afrique tropicale; un projet de soutien au réseau de recherche collaborative en Afrique tropicale—septembre 1987

IITA/ILCA/ICRAF Research proposal for the support of in-country research on alley farming submitted to IFAD by IITA, ILCA, ICRAF on behalf of the ad-hoc committee of AFNETA, revised, Septembre 1989

IDRC Memorandum of grant conditions IDRC-IITA, November 1988

IDRC S. Koala, travel reports (1990—1992)

UNDP Guide for the evaluator. The project evaluation information sheet, January 1991

Bede N. Okigbo Dr Networking, opportunities, challenges and strategies for the future, 3rd AGMM of AFNETA, ICRAF, Nairobi, Kenya, 27—31 January 1992

FAO Extension of alley farming with small ruminants in Nigeria, FAO/Government Cooperative Program, GCP/RAF/261/NET, technical report, Rome, 1992

- Ensemble des rapports techniques Phase I et propositions phase II fournis par NARS à la mission d'évaluation

- AFNETAN, Newsletter of the alley farming network for tropical Africa (AFNETA)