



Networking announcements Petites annonces du Réseau



Networking announcements

International and resource organizations

(For the addresses of these organizations, please refer to the participant address list)

- The *Centre for Tropical Veterinary Medicine (CTVM)* of the University of Edinburgh is carrying out research on the nutritional and physiological implications of draft work, using cattle, buffaloes, horses and donkeys. Several interactions are being studied including nutrition-work, work-milk production and work-disease, and it is hoped to establish criteria for selecting draft animals. CTVM publishes "Draught Animal News" twice a year. It runs courses on animal traction, in cooperation with Deventer College in The Netherlands. It is planning to hold an international seminar on the use of donkeys in 1990.
- The French agricultural research organization *CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement)* has several institutes working on animal traction topics. *Institut de Recherches Agronomiques Tropicales (IRAT)* has undertaken much research on the use of draft animals for crop production, for example in the cotton zone of Côte d'Ivoire, and has recently produced the first of the three-volume CTA-CIRAD annotated bibliography of animal traction. The *Institut d'Élevage et de Médecine Vétérinaire des Pays Tropicaux (IEMVT)* has been involved in research on the role of male and female draft animals in farming systems, and is currently working on the production of the second volume of the CTA-CIRAD annotated bibliography of animal traction. *CEEMAT (Centre d'Études et d'Expérimentation du Machinisme Agricole Tropical)* has been carrying out research and development on animal traction implements for many years. It is presently researching alternatives to mouldboard plows, and has developed an animal-drawn single-tine cultivator and a rolling cultivator for use in semi-arid conditions. CEEMAT is working on the third volume of the CTA-CIRAD bibliography of animal traction. In September 1988 CIRAD is holding a seminar on the economics of mechanisation in tropical countries, in which a major theme will be the role of animal traction.
- The Department of International Agricultural Education of *Deventer College* in The Netherlands organizes several courses relating to tropical agriculture. In cooperation with the University of Edinburgh, it is organizing a course specifically relating to draft animal power and harnessing techniques.
- *Environment and Development in the Third World (ENDA)*, based in Senegal, is an international non-governmental organization. It is presently working on the development and diffusion of animal-powered systems for crop processing and water-lifting, and has published several pamphlets relating to this type of technology.
- *GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit)* is financing several projects in Africa undertaking research and development on animal traction. GTZ is also publishing some books on animal traction in cooperation with the *German Appropriate Technology Exchange (GATE)*, a specialized division of GTZ. These include a series of animal traction resource books, designed to update the "Animal traction in Africa" book GTZ published in 1982. GATE has recently published the "Animal traction directory: Africa", "Ani-

mal-drawn wheeled toolcarriers: perfected yet rejected" and will shortly publish "Animal power in farming systems", the proceedings of the previous West Africa Animal Traction Networkshop. GATE is currently supporting research and development on animalpowered gears, mills and water-lifting devices and would be interested to cooperate with organizations in Africa, Asia and Latin America interested in evaluating this technology.

- *Howell Farm* is a "Living History" farm in the United States of America, using animal-powered implements employed in North America at the turn of the present century. It provides ten-week practical training courses in the use of draft animal technology, and these have helped to give the farm links with several animal traction programmes in developing countries.
- The *International Crop Research Institute for the Semi-arid Tropics (ICRISAT)* is undertaking on-station animal traction research as part of the Resource Management Programme at the ICRISAT Sahelian Centre in Niger. Work relating to millet, cowpea and groundnut production includes measuring and analysing different components of animal-powered tillage including draft forces, soil-water relationships, weed control and time-cost parameters.
- The *International Development Research Centre (IDRC)* is funding several animal traction research and development projects in Africa. Since IDRC considers that animal traction is likely to play an increasingly important role in African farming systems, it may well be prepared to support other projects. It considers that more research emphasis should be placed on interactions between animal energy utilization and other aspects of farming systems, notably the social, economic and environmental impact of animal traction use and the economic, technical and operational constraints to the effective employment of draft animals in farming systems.
- The *International Livestock Centre for Africa (ILCA)*, based in Ethiopia, has a specific animal traction research thrust, with studies on draft animal equipment, nutrition and systems of utilization being carried out in Ethiopia, Nigeria and Mali. ILCA is currently updating and annotating its animal traction bibliography, and will publish this in 1990. ILCA is hoping to facilitate the development of an Animal Traction Research Network, and it will shortly be issuing a regular newsletter. A workshop on animal traction research is scheduled for 1989. ILCA would welcome cooperation with national agricultural research organizations to undertake collaborative animal traction research programmes. When its proposed EEC-supported project is approved, ILCA may be able to provide some of the funding needed for such programmes.
- At the *Katholieke Universiteit Leuven* in Belgium the department of agricultural economics of the "Faculteit der Landbouwwetenschappen", has been carrying out socio-economic studies on animal traction in conjunction with projects in Zaïre and Guinea.
- The *Overseas Division of AFRC-Engineering* (the Institute of Engineering Research of the Agriculture and Food Research Council of the United Kingdom) has been developing techniques and instrumentation for measuring and logging many of the mechanical and physiological parameters associated with animal draft. Field trials with draft animals are being undertaken in cooperation with national and international institutions in Africa and Asia. Initial results show that draft forces during work are very variable and that frequent brief rests by animals appear to be effective in reducing stress, as indi-

cated by heart rate measurements. It is hoped to use the information obtained from the data loggers to develop some form of scoring system that could be used in the field to compare and evaluate different animals and implements.

- *Rumptstad* is a manufacturer of agricultural equipment in The Netherlands. It has been working with several organizations in Africa to develop appropriate equipment designs that can be locally manufactured by blacksmiths or small workshops. It is prepared to send samples of its equipment free-of-charge to organizations willing to provide technical feedback.
- *RESPAO/WAFSRN*, the West African Farming Systems Research Network (WAFSRN), known in French as the Réseau d'Etude des Systèmes de Production en Afrique de l'Ouest, (RESPAO) has been in existence for several years. In 1987 it appointed a full-time Network Coordinator, based at SAFGRAD in Ouagadougou. It organizes workshops, produces a bulletin, is developing databases and intends to launch a scientific journal. It recognizes the similarity of interests shared with the West Africa Animal Traction Network (WAATN) and it would therefore welcome very close collaboration with WAATN.
- *SAFGRAD*, the Semi-Arid Food Grain Research and Development Programme of the Organization of African Unity, based in Ouagadougou, Burkina Faso is involved in animal traction research and development, and it has developed a prototype animal-drawn ridge-tying implement. It acts as host organization to a number of research networks in Africa, including WAFSRN/RESPAO, and would welcome close collaboration with the West Africa Animal Traction Network.
- In response to requests from development projects in Africa, *Shuttleworth College and Project Equipment Ltd.* in United Kingdom are holding six-week courses in animal draft technology and implement design. The courses, designed for field instructors and the supervisors of small workshops, include practical welding and the fabrication of blacksmithing equipment.
- The *Technical Centre for Agricultural and Rural Cooperation (CTA)*, financed by the EEC and based in The Netherlands is actively involved in gathering and disseminating information relating to rural development in tropical Africa and elsewhere. Animal traction is an area of interest of CTA, and in addition to co-sponsoring the present animal traction workshop, CTA is publishing annotated bibliographies of animal traction in cooperation with CIRAD in France.
- The *Technical University of Berlin* is carrying out a questionnaire survey on the use of animal traction equipment and techniques in several parts of the world and is cooperating with a research programme in Brazil to develop an animal-drawn seeder capable of planting through mulch.
- The United Nations agency *UNIFEM* (Fonds de Développement des Nations Unies pour la Femme), is interested in the implications for women of animal traction. Its regional agency in Dakar would be interested to learn of research being carried out in this field.
- Staff of the *University of Hohenheim* in the Federal Republic of Germany are carrying out animal traction research at the ICRISAT Sahelian Centre, Niger. Studies are concentrating on the working power of different draft animals and the draft forces imposed by different implements, notably the Arara toolbar fitted with tines, ridger or plow. Further work on animal-powered gears and animal-drawn carts is planned.
- The Development Technology Unit of the *University of Warwick* is carrying out re-

search and development work on the use of animal power to drive stationary machinery, such as that used for water-

lifting and crop processing. It is interested in evaluating this technology with partner organizations in Africa and Asia.

National programmes in Africa

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- In recent years animal traction has spread rapidly in *Benin*. The Centre d'Action Régional pour le Développement Rural de l'Atacora, *CARDER-Atacora*, is undertaking research-extension in a yam-growing area where fields are seldom clear of tree stumps. While the use of plows and ridgers for maize and groundnut cultivation is increasing rapidly, the number of carts and seeders in use is declining. *CARDER-Atacora* would welcome information exchange relating to technical and economic constraints to the use of animal traction in the yam-growing zone, and methods to overcome these.
- One animal traction programme in *Cameroon* is *PAFSAT*, the Project for Promotion of Adapted Farming Systems based on Animal Traction in the North West Province of Cameroon. This is working to develop ecologically sustainable means of using animal traction in an area normally very susceptible to erosion due to the gradients and high rainfall. It has published extension manuals and is working closely with blacksmiths in the production of equipment.
- *The Gambia* started its animal traction programme in the 1950s, and now both bovines and equines are widely used. Recent research has highlighted the technical, social and economic problems faced by women wishing to use animal power for rice production. Other studies have quantified foaling and mortality rates among horses and donkeys. The *National Mechanization Committee* is a multi-disciplinary body that formulates and reviews animal traction research programmes. It would welcome liaison with other national programmes, particularly in relation to the use of animal power for rice cultivation, and developing the role of rural blacksmiths.
- The *University of Nairobi, Kenya*, has an *Animal Draft Power Development Project* based at the Department of Agricultural Engineering. This has been carrying out research on harnessing systems and the use of donkeys for crop cultivation. The project has already been liaising with programmes in *Zambia*, and would value further information exchange. It intends to hold training courses on the local production of harnesses and would welcome participation from other countries.
- Animal traction is becoming very widely used in *Mali* and the *Ministère de l'Agriculture* is sponsoring a wide range of projects relating to draft animals. In the south the *Compagnie Malienne pour le Développement des Textiles, CMDT* is carrying out a major programme of extension, providing a comprehensive package of support services relating to animal traction. It is working with *Rumptstad* to assist village blacksmiths to fabricate animal traction equipment. *Opération Haute Vallée (OHV)* is also assisting village blacksmiths to fabricate equipment. *Division de Recherche sur les Systèmes de Production Rurale (DRSPR)*, is carrying out animal traction research in the *CMDT* and *OHV* zones, and has produced a video on ani-

mal traction which may be requested. All these organizations would welcome co-operation and information exchange with other programmes in the region.

- Animal traction is not yet widely used in *Mauritania*, but the *Centre National de Recherche Agronomique et de Développement Agricole (CNRADA)* in planning to start a programme of research-development in this area. It would be interested in learning of other experiences relating to animal traction use in arid areas.
- Mules and donkeys are widely employed in *Morocco*, and to a lesser extent oxen and camels are used for work. Animal traction is included in the teaching, research and development work of the Département de Machinisme Agricole of the *Institut Agronomique et Vétérinaire Hassan II*. Studies have been carried out on the economics of animal traction use in Morocco, and the design characteristics of the traditional ard plow. Collaborative projects have been carried out with Mauritania and The Gambia to install water-lifting devices using traditional artisanal technology.
- In *Niger*, several projects and organizations are working with animal traction, including "Projet Recherche, Formation et Production pour l'Utilisation de Matériel Agricole en Zone Sahélienne", based at Tahoua. The project has produced several extension booklets, and ongoing research work involves the testing and modification of soil-tillage equipment. The project would like to exchange information and possibly swap equipment samples with other programmes in the region, and areas of particular interest are tine-tillage, ridging systems and the extraction of water.
- Animal traction is widely used in the north of *Nigeria*, but not in the south. Surveys on the present use of animal traction are being carried out by the *Institute for Agricultural Research and National Animal Production Research Institute* based at Ahmadu Bello University, Zaria. In the State of Kaduna, research on animal traction is being carried out by the National Livestock Projects Department and the Federal Agricultural Coordinating Unit (FACU). All these organizations would welcome information exchange with other programmes in the region.
- Horses, donkeys and oxen are very widely used in *Senegal*. Many development organizations are involved with the development of animal traction but most research in this field is undertaken by *Institut Sénégalais de Recherches Agricoles (ISRA)*, the host organization of the present workshop. As described in the ISRA papers prepared for the workshop, animal traction research interests include tine tillage, the employment of draft cows, the use of animal traction for rice production, the economics of animal traction, equipment development and the role of blacksmiths in animal traction. ISRA has published numerous reports on animal traction and would like to share its experiences with other programmes in the region. The *SISMAR* implement factory, established in 1962, has worked closely with farmers, agricultural development projects and with research organizations in Senegal and France in developing its present broad range of animal traction equipment.
- The *Sierra Leone Work Oxen Programme* team is carrying out research, development and extension work relating to animal traction. It attributes much of its success and operational flexibility to the fact that it developed as a local programme, and was not created as a pre-planned, preconceived, externally-funded project. It is highly motivated towards networking and would like to collaborate and share experiences with other programmes in the region. It is particularly

interested in rice cultivation using draft animals, the social implications of animal traction adoption, work-disease interactions and the potential for making greater use of traditional animal husbandry techniques.

- The *Mbeya Oxenisation Project* in Mbeya, *Tanzania* is an integrated research-development-extension project. It would like to learn of the experiences of other programmes in Africa, particularly in regard to the use of double-row weeders, such as the Ariana.
- *Projet pour la Promotion de la Traction Animal (PROPTA)*, *Togo* provides a national service to undertake and coordinate research, development, monitoring and evaluation work relating to animal traction. It publishes a quarterly bulletin "Force Animale". It is very interested in collaboration with other programmes in the region, particularly in the areas of equipment production, the use of cows for draft purposes and the use of animal power for growing tuber crops. *Société togolaise du Coton (SOTOCO)* is the national cotton development company with a specific animal traction component. It would welcome information exchange relating to the use of animal traction for cotton production.
- *Projet Rural* in the Diocèse de Mbuji-Mayi in *Zaire* is a non-governmental organization introducing animal traction in the

east of the country. It is working closely with blacksmiths in the fabrication of animal traction equipment. It is affiliated to the Secrétariat des ONG pour la Traction Bovine (SOTRABO), which is helping to coordinate animal traction work in *Zaire* and would be most interested in establishing relations with other animal traction programmes in the region.

- In *Zambia* the Agricultural Engineering Section of the Ministry of Agriculture and Water Development is responsible for an *Animal Draught Power Programme* which is presently concentrating on improved harnessing and the local production of suitable implements. *The Animal Draught Power Research and Development Project*, based at Magoye Regional Research Station is carrying out research and development on animal-drawn implements and developing standardized testing procedures. Among the many projects in *Zambia* with animal traction components are the *North-Western* and the *Gwembe Integrated District Development Programmes*. All the projects mentioned would like to participate in networking activities in the region. Experience on implement design and harnessing techniques is available in *Zambia*, but more information is requested on inexpensive ox cart designs that can be built and maintained in rural areas.