

# Local production of animal-drawn implements

by

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## **Abstract**

*Rumpstad BV is a manufacturer of animal-drawn implements. The company decided to promote the local manufacture of its products in Third World countries. A first rural workshop was set up in Mali, equipped with the necessary machinery, training and support. An alternative scheme involves supplying implements in a kit form, leaving assembly, welding, bending and painting to the local blacksmiths. Such a scheme is operational in southern Mali. Both methods appear to be successful and have assisted the development of animal traction in Third World countries. Rumpstad offers a complete set of implements free-of-charge to projects which are able to test them and will provide technical feedback to the manufacturer.*

## **Introduction - Rumpstad's offer**

Rumpstad BV, in The Netherlands, has more than 50 years of experience of developing and manufacturing soil tillage implements. During the past ten years Rumpstad, in close co-operation with local experts, has developed a range of implements designed for animal traction. Rumpstad wishes to use the occasion of the workshop to exchange experiences on the subject of animal-drawn implements and to discuss the possibilities of co-operation in this field. Rumpstad is able to offer a complete set of implements free-of-charge to those projects which would be able to test them, and which would be willing to pass on the results of their tests to Rumpstad.

## **Rumpstad's experience**

Rumpstad's experience with animal traction implements started with a project in Mali where people were faced with heavy clay soils.

The available plow had an unsuitable mould-board, designed for sandy soils, and implement life was short. The implements were difficult to handle and the required draft was too high for the available animals. Rumpstad was asked to develop a range of implements adapted to local conditions which could be locally manufactured. The supply of machinery, tools, jigs, together with training was an essential part of the agreement with the Dutch Ministry for International Co-operation.

After three years, involving intensive work both in Mali and The Netherlands, Rumpstad supplied a plow that had been designed to meet the specific needs of the farmers in southern Mali. It is considered that this plow is easier to handle, requires less draft and will have a longer working life. However, due to the high costs of manufacture in The Netherlands, the price of the plow was far too high. The only way to tackle this problem was to start local manufacture.

Among the reasons why Rumpstad decided to study the implications for local manufacture in detail, was the problem of surplus food production in Europe. This was leading to a decrease in demand for agricultural machinery in Europe, and a likely reduction in the capacity of European manufacturers of 40%. On the other hand, Third World countries are not yet self-sufficient in food, the market for agricultural implements is expanding, manufacturing costs are much lower than in Europe, and Africa has the potential to supply agricultural products to Europe in the future. This reasoning formed the basis of Rumpstad's commitment to manufacturing agricultural implements in Africa and Latin America.

Moreover, such co-operation is fully in line with the policies of the major multilateral and bilateral aid agencies.

### Skill and tool transfer

The first step in local manufacturing involved the establishment of a rural workshop in the region of Niono, Mali. This workshop was provided with basic machinery such as drilling machines, a hydraulic press and a power hacksaw. More importantly, tools and jigs were supplied, together with training and support. This workshop was able to produce implements of good quality at prices acceptable to the farmers. A whole range of implements, including cultivators, scrapers, harrows and a seed drill was developed and manufactured. Similar schemes were developed in Zambia, Burkina Faso, Sudan, Ghana and Nicaragua.

Another successful way of manufacturing implements is to co-operate with local blacksmiths in a particular region. In this case working parts and semi-fabricated parts are supplied along with some basic materials of good quality. The blacksmith welds, bends, assembles and paints the equipment. He has to be equipped with a generator, welding equipment, tools and jigs in order to manufacture implements of good quality that are sufficiently uniform for parts and components to be interchangeable between implements. This type of project was carried out in the region of southern Mali in which the cotton company CMDT (Compagnie Malienne pour le Développement des Textiles) operates. A similar scheme was developed near Bamako, Mali, in co-operation with Opération Haute Vallée (supported by USAID) and various private entrepreneurs. Two more rural workshops in are planned in Mali, in order to train and to support the local blacksmiths and farmers.

### International co-operation

Reviewing the experiences of the past ten years we conclude that this way of international co-operation will promote rural self-development. For most smallholder farmers in

Africa "tractorization" is still only a dream. It takes 500 hours of backbreaking work to prepare one hectare of land by hand; it takes 60 hours to do the same job by animal traction. Motorisation reduces this to 20 hours, but obviously the first step is the most important. Rumpststad sees great possibilities for animal traction over a longer period, especially when prices for agricultural products become realistic. This means that there should be no "dumping" of food surpluses in Africa, but a rather the structured development of locally-manufactured agricultural implements, leading to higher agricultural production, greater income for farmers and many benefits for the countries involved.

### "Multicultureur" or toolbar

The latest model of the Rumpststad Multicultureur consists of a toolbar with a depth control wheel. A ridger, mouldboard plow or adjustable cultivator can be attached to the toolbar. The cultivator can be equipped with duckfoot or chisel points. No tools are needed to interchange the various assemblies, as fixing involves a single eyebolt. The wheel hub is equipped with a hardened bushing and two spring-steel bearings. Both a light model for donkeys, and a normal model for oxen, are available. All wearing parts are made of hardened steel for long working life.

### Résumé

*Rumpststad BV est un fabricant d'équipements de culture attelée. La société décida de promouvoir et de développer la fabrication locale de ses produits dans les pays du tiers monde. Un premier atelier rural a été établi au Mali, équipé des machines, de l'outillage, du soutien et de la formation adéquates. Une alternative consiste à fournir les équipements sous forme de kit, laissant aux forgerons locaux le soin du montage, soudage, pliage et peinture. Un projet utilise ce principe au Mali Sud. Ces deux méthodes ont été couronnées de succès et contribuent au développement de la traction animale. Rumpststad BV offre une chaîne de culture attelée gratuite aux projets qui peuvent la tester et rendre compte des résultats.*