

# **MALAWI POVERTY REDUCTION STRATEGY Paper** (Simplified Version) [How AfriCart Handcart Technology Can Assist in Poverty Reduction in Malawi.]

(As distributed in the *Weekend Nation* of July 10-11, 2004) Verbatim excerpts in “Arial” typeface.  
[Comments by Arnold P. Wendroff, Ph.D., **Malawi Handcart Project** in “Times New Roman” typeface within [editorial brackets].]

## **Introduction**

### **Which is this Poverty?**

Such groups include labour-constrained female-headed households, estate workers, or tenants, ganyu workers, orphans, street-children and child-headed households, persons with disabilities, low-income urban households, the elderly, the uneducated and the unemployed. [All of these poverty-stricken groups are adversely affected by their lack of wheeled transport.]

### **What Causes this Poverty?**

Many causes of poverty in Malawi include low levels of education, poor health status including the problem of HIV/AIDS problem, lack of or limited employment, rapid population growth, lack of access to credit and gender inequalities. [One overlooked but significant cause of poverty in Malawi is the lack of wheeled transport.]

## **GOALS OF MPRS**

The overall goal of the MPRS is to empower the poor so that they are able to find basics needed for living. [Adequate transport is a basic necessity of living, as anyone capable of reading this paper will attest to! The dissemination of AfriCart handcart technology will empower the poor in many ways.]

## **PILLARS OF THE MPRS**

The MPRS will achieve the goal of poverty reduction by focusing on four key areas. These are called PILLARS and they are:

1. Sustainable Pro-poor Growth
2. Human Capital Development
3. Improving the Quality of Life of the Most Vulnerable
4. Governance

The MPRS also recognizes the following cross-cutting issues: HIV/AIDS; Gender; Environment; Science and Technology

## **PILLAR 1: PRO-POOR GROWTH**

Pro-poor growth is economic growth that involves and benefits the poor. It intends to increase income that will spread to benefit many poor Malawians.

## **SOURCES OF PRO-POOR GROWTH**

### **Agriculture**

About 68 percent of total income of the poor in rural areas comes from Agriculture. Increasing incomes in Agriculture will contribute to poverty reduction. In pursuing this goal, MPRS recommends availability of farm inputs to farming families. MPRS will also promote small-scale irrigation like the use of treadle pumps; Providing technical advisors; Offering farmers opportunities for credit to buy and maintain irrigation devices; Making dams and draining wetlands. [Agricultural production is severely constrained by the lack of wheeled transport. Most farmers must carry all their farm inputs and outputs on their heads. This is not conducive to efficient farming. Farmers frequently can not carry their crops to markets on their heads. Treadle pump use is very inefficient when farmers

must carry the pumps and their intake and delivery hoses on their heads and shoulders. AfriCart handcarts are one solution to the current lack of farm transportation.]

The other objective is to reduce land shortage and land degradation. MPRS also encourages use of machines for farming, for example providing tractors for hire to cooperatives and associations. The strategy also recommends empowerment of women in agricultural production. [The AfriCart handcart is a machine for farming, which has a realistic uptake potential within Malawi. As history demonstrates, there is little realistic uptake potential for tractors within Malawi. Let us concentrate on realistic technology introductions, like handcarts, which will assist women, who are the primary transporters of domestic and agricultural materials.]

## **Natural Resources**

### **Fisheries**

For the fish we catch, MPRS will establish better markets and marketing practices by providing training in handling, processing and packaging of fish products. More extension workers will be provided and the curriculum in training colleges changed to suit new needs. [AfriCart handcarts are of obvious utility in the handling, processing and marketing of fish. Extension workers should be familiarized with AfriCart technology, and disseminate it to both end-users such as fisher-folk, as well as to the carpenters serving these fishing communities.]

### **Forestry resources**

There will be committees at community levels to manage forestry with the advice of extension workers. But campaigns to plant more trees will be done. [AfriCarts are invaluable in transporting seedlings from nurseries to planting sites, as well as for carrying cut timber and sawn planks. Currently, most of this community forestry transport is done by headloading.]

### **Micro, Small and Medium Scale Enterprises**

Micro, small and medium scale businesses allow the poor to generate their own income. Specifically MPRS will: Develop industrial sites with some shared key facilities; Improve marketing; Ensure supply of raw materials; Provide technology and training; Promote exporting of goods. [AfriCart manufacture is already occupying several small businesses in Blantyre, Lilongwe and Mzuzu. There is the potential for many rural and urban carpenters to expand their businesses by building Africarts for their local markets. Virtually all businesses require the transportation of materials and goods. AfriCart handcarts are one realistic IMT (intermediate means of transport) suitable to the majority of Micro, Small and many Medium scale enterprises in Malawi.]

### **Manufacturing and Agro-Processing**

MPRS proposes that Malawi explores, identifies and promotes new products to be manufactured. ... [The AfriCart is an outstanding example of one of the “new products to be manufactured” in Malawi. If the MPRS is serious, then it must immediately begin to promote the dissemination of AfriCart handcart technology in Malawi, and not simply talk about it.]

### **Small Scale Mining**

The MPRS focuses on small scale mining of quarry stones, gem stones, pottery ceramic and lime stones. The MPRS will involve communities and: Provide simple technology and strengthen research centres; Revise mining procedures and ensure lawful mining. [Mining is based on the transport of heavy and bulky materials. Handcarts are ideal for much of artisanal mining envisaged by the MPRS. Government should encourage the importation of heavy-duty handcart wheel and axle components better suited to heavy loads and rocky terrain than the bicycle wheels used in the AfriCart handcart design.]

## **Rural Infrastructure**

In order to ensure that Malawi builds rural infrastructure MPRS will: Increase feeder roads in rural areas through the National Roads Authority (NRA); Provide loans to urban families to buy stoves; Ensure that local assemblies take over the planning, construction and maintaining of the infrastructure; Provide good drinking water; Allow more firms to provide telecommunications services. [Building and maintaining rural roads requires similar transport as “Small Scale Mining. Please see the comments immediately above!]

## **PILLAR 2: HUMAN CAPITAL DEVELOPMENT**

Human capital development involves two key issues and these are Education and Health.

### **Technical, Entrepreneurial Vocational Education and Training (TEVET)**

MPRS recommends establishing Village Polytechnics to provide skills according to different needs; On-the-job training for the youth; Promoting ways of maintaining equipment. [The Malawi Handcart Project has repeatedly (since 2000) contacted TEVETA and suggested that they assist in the dissemination of the AfriCart handcart design by incorporating it into the technical college carpentry curriculum. Although TEVETA officials have repeatedly given lip-service to this suggestion, they have failed to implement it.]

### **Health and Population**

Malawi needs a health[y] population that can meaningfully take part in poverty reduction. The MPRS believes in the wisdom that indeed prevention is better than cure by taking preventive health care as a top priority. Key aims in prevention are eating good food, drinking clean water, practicing hygiene and preventing common diseases such as malaria. [In order to have any food, let alone “good food” farmers must first grow the crops that constitute that food. As stated above, farmers who must carry their farm inputs and outputs on their heads are in a poor position to grow any food. In most of Malawi’s villages, the provision of water is by headloading it from the nearest water source. It is impossible to practice good hygiene with the small amount of water available for washing, when headloading is the only means of domestic water supply. The use of a handcart such as the AfriCart can enormously increase water availability for both domestic hygiene, as well as for small-scale irrigation by watering cans or treadle pump. This allows healthy vegetables to be grown even during the dry season, further enhancing health.]

### **Basic Healthcare**

The MPRS recognises the Essential Healthcare Package (EHP) as essential to improving quality of basic health care through: ... Extending more medical services (e.g. ... ambulances, ...) [The AfriCart is suitable for use as an ambulance as is. Its basic design is readily extended to make a purpose-built ambulance, and it can be easily towed behind a bicycle as a trailer, when the road surface and topography permit.]

### **Good Nutrition**

Malnutrition is a result and a cause of poverty. ... [See the preceding comments under “Agriculture”]

## **PILLAR 3: IMPROVING THE QUALITY OF LIFE OF THE MOST VULNERABLE**

The most vulnerable is a general group of people who include: Individuals and households affected by disasters, Households headed by orphaned children, The elderly, Female-headed families, Persons with disabilities, Orphans, Breast-feeding and pregnant mothers, the unemployed, and the landless. These people will need a helping hand called safety nets. [Virtually all of these vulnerable persons could benefit from the availability of wheeled transport such as the AfriCart can provide. Their current, and far less attractive transportation alternative is headloading.]

### **Safety Nets**

There are two main safety net approaches:

### **Productivity Enhancing Safety Nets**

This includes distribution of free inputs to farmers without capital and implementing public works programmes for the landless and urban poor in exchange for food or money. [In Malawi, productivity of all sorts, and especially agricultural productivity, is extremely low. Many factors responsible for this low productivity are alluded to in the MPRS. One factor that is largely overlooked, yet is of critical import, is the lack of wheeled transport. Availability of bicycles, wheelbarrows, ox- and donkey-carts fail to fill the transport void for the average farmer. Handcarts, and specifically the AfriCart design, are a viable transport option for many of these farmers, if government would only act to disseminate this technology which it has been aware of since its initial introduction in 1998.

The Chitedze Agricultural Research Station's Farm Machinery Unit first assessed conventional handcarts, at the express order of then Minister of Agriculture Aleke Banda, in 1998. A very favourable report which recommended that "development policy should concentrate on the ... utilization of handcarts rather than the present policy of ox- and donkey-cart advocacy," was handed to the Minister in May 1998. Yet the Ministry of Agriculture did not act to further assess, let alone implement, the dissemination of handcart technology.

As conventional wheel-axle handcart components were, and remain unavailable in Malawi, the AfriCart design using bicycle wheels was selected as a viable alternative, albeit one less rugged, heavier, and of lesser load-carrying capacity. It was initially devised in mid-2000 at Livingstonia, and after demonstrating it to former President Bakili Muluzi on July 28, 2000, he purchased three AfriCarts from Livingstonia Technical College, ostensibly for the purpose of assessing their utility. Three years later they were still languishing in a corner of Sanjika Palace, and no assessment had occurred. The design was then taken to Chitedze Research Station in 2002, where the design was further refined. Chitedze's Farm Machinery Unit assisted in training several local carpenters to build AfriCarts, but the Ministry did not act to further disseminate this technology.

At about the same time, in 2002, the Ministry of Local Government's Malawi Rural Travel and Transport Programme (MRTTP) was testing sixteen early-model AfriCarts. Despite some problems with spoke breakage, due to overloading resulting from inadequate operator training) the MRTTP's March 2003 report concluded that "The introduction of the Malawi Handcart [AfriCart] has also relieved the burden of head and shoulder loading and is has been taken as an alternative to the bicycle for heavy carriage for both business and domestic use. ... And generally, the project has also managed to bring awareness to the people in the areas to be innovative in rural ... transport to facilitate their mobility by adapting a wooden frame Malawi Handcart for carrying goods." Yet, once again, there was no move to disseminate the design widely, so that its benefits could be included in the Malawi Poverty Reduction Strategy.

In a similar vein, the Malawi Industrial Research and Technology Development Centre had been briefed on the AfriCart in June of 2002, but took no action to assess or disseminate the technology. However, the Malawian Entrepreneurs Development Institute, having been informed of the AfriCart design in mid-2003, built several AfriCarts and made some effort to disseminate the new technology by exhibiting them to potential customers at an agricultural fair.

In mid-2003 thicker and stronger 12 gauge spokes were substituted for the conventional and weaker 14 gauge spokes in the AfriCart's wheels. These spokes virtually eliminated wheel breakages due to overloading. This modification and its implications were reported to the MRTTP and to the Ministry of Agriculture, as well as to numerous other Malawi Government Ministries and Agencies, as well as to many NGOs operating in Malawi. Once again, no action was taken to officially assess or disseminate this urgently needed technology.

In October 2003, the AfriCart display (sponsored by the Malawi Handcart Project) won third place in the Farm Mechanization Category at the 1<sup>st</sup> National Agricultural Fair held in Lilongwe.

In June 2004, the AfriCart display (sponsored by the Malawi Handcart Project) won first place in the Farm Mechanization Category at the 2<sup>nd</sup> National Agricultural Fair held in Blantyre. ]

### **Improving Disaster Management**

... Action includes: Rushing food to disaster victims ... Providing seed ...; Providing non-food basic necessities. [Wheeled transport should be considered a “non-food basic necessity.” How is food to be rushed to disaster victims in remote areas? At present, it is mostly on the heads of the recipients. Is this our only option? I suggest that handcarts have a considerable applicability in the disbursement of relief food, which donors would readily assist with if only the Malawi Government would ask for such appropriate IMTs.]

Finally, Government will help in rebuilding what is destroyed by providing equipment and technical people if necessary. [Once again, AfriCarts, which can be built locally from locally available materials, are appropriate “equipment” for moving the implements and materials necessary for “rebuilding what is destroyed,” and will remain to assist those impacted with their ongoing transport needs long after the disaster is history.

### **CROSS-CUTTING ISSUES**

The MPRS has identified four crosscutting issues: HIV/AIDS; Gender and Empowerment; Environment; Science and Technology.

#### **HIV/AIDS**

The MPRS recommends implementation of the National HIV/AIDS Policy by prevention and improving quality of life of those infected with HIV/AIDS. Other activities include supporting orphans and households affected, working with herbalists and traditional healers and promoting workplace HIV-related interventions. [Availability of an AfriCart handcart can not only “improve the quality of life” for both AIDS victims and their family members, by freeing them of the burden of headloading, but by reducing the amount of energy and time expended on domestic transport, can free up a commensurate amount of time and energy for food production. Locally-built AfriCarts donated by the Malawi Handcart Project are currently being employed by the National Association of People Living With Aids (NAPHAM) in Mzuzu as ambulances and for carrying medical supplies to HIV-impacted families. AfriCarts are also being used by two AIDS orphans organizations: in Mangoche by Mrs. Catherine Chipembere, and by Upile Orphan Care in Blantyre.]

#### **Gender and Empowerment**

The MPRS recommends enhancement of Women’s participation in Leadership and Decision Making Processes; ... [As women are unequally burdened by headloading water, firewood, maize to the mill, and many other domestic and agricultural transport tasks, providing them access to AfriCart IMTs would empower them in a very practical and tangible manner. This concept has repeatedly been brought to the attention of the Ministry of Gender, Youth and Community Services, who seem to be on the verge of acting to implement the concept in a concrete manner.]

#### **Environment**

The MPRS will proceed from the past efforts by encouraging Malawians to explore alternative livelihood strategies; ... more ably support environmental management; ... [One sorely needed aspect of “environmental management is reforestation of areas deforested by charcoal and fuelwood harvesting, and by agricultural land-clearing on unsuitably steep slopes. These practices have led to rapid soil erosion, and flooding. Reforestation requires the establishment of adequate

nurseries, and the transportation of heavy seedlings to planting sites. Handcarts are the most suitable IMT for this application.]

### **Science and Technology**

The MPRS will strengthen National Science and Technology Capacity by adoption of a new National Science and Technology Policy, the establishment of a National Commission for Science and Technology Act. The MPRS will also strengthen the application of science and technology in highly beneficial sectors of the economy and facilitate the creation of a science and technology culture in Malawi. [Wheeled transport is fundamental to technological development. Most Malawians neither possess nor have access to wheeled transport for their daily domestic and agricultural tasks. The dissemination of the AfriCart handcart design would go a long way to rectify this serious technological deficit.]

Natural Resources College, Lilongwe, July 11, 2004

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# The AfriCart's Role in Malawi's Economy

By Arnold P. Wendroff, Ph.D.

Malawi's domestic and international economy has been, is, and is likely to remain one based on agriculture. The severe constraints on agricultural productivity in Malawi result in part from the low level of farm mechanization. Given the large population, small farm size, depleted soils, and semi-arid climate, it is unlikely that the average small farmer will be able to afford specialized agricultural machinery that could assist him or her to increase agricultural output. The average farmer employs a hoe for tillage and all farm inputs and outputs are moved by head-loading. Ox- and donkey-carts are possessed by a minority of farmers, and as population has increased, and farm size has shrunk to about one hectare, the average Malawian farmer could not utilize the capacity of an ox-cart assuming he or she could find the capital to acquire one.

All farm inputs and outputs must be transported to and from fields. If farmers are to participate in the market, as opposed to the subsistence economy, they must have the means to transport their crops to market. Most farmers have only their feet to move their goods over Malawi's extensive rural road infrastructure. Bicycles are the most common wheeled vehicle in Malawi, but they are of little use in crop production. Wheelbarrows are not much better, due to their small volumetric capacity and the requirement that the operator lift half the load as well as balance it laterally. As mentioned earlier, ox- and donkey-carts have demonstrated their extremely limited uptake potential.

The current HIV/AIDS pandemic has seriously constrained Malawi's agricultural production. Sick farmers have limited energy for cultivating their land and transporting their farm inputs and outputs. The current food shortages in southern Africa are in large part due to HIV infection. Any technology that has a realistic chance of increasing the availability of farm labour deserves to be seriously evaluated.

In addition to working their fields, farmers must engage in a variety of domestic transport activities: carrying water, firewood, maize, bricks, and patients to hospital. Time and energy expended on such work is time that is un-available for productive agricultural activities. Given this shortage of labour, domestic transport needs to be made more efficient.

One realistic solution to Malawi's agricultural, as well as domestic transport dilemma is the introduction of the AfriCart handcart design, developed at Chitedze Agricultural Research Station. Handcarts, as opposed to wheelbarrows, require no lifting by the operator, as the load is balanced between the two wheels. The AfriCart's box-body has about twice the capacity of a wheelbarrow, and the two bicycle wheels, with their ball bearings and pneumatic tyres, make the AfriCart much easier to push over uneven ground.

AfriCarts are designed to be built by rural carpenters, using readily available wood planks, bicycle components, and common wood screws and nails. AfriCarts enable women and children to move loads of well over 100 kg with no lifting, at about normal walking speed (some 4 kilometers per hour, over distances of many kilometers. The cost of an AfriCart is comparable to that of a wheelbarrow or bicycle, yet it is of far more use to a farmer.

AfriCarts have been extensively developed and tested in Malawi since their introduction in mid 2000. The Malawi Rural Travel and Transport Programme issued a report (March 2003) recommending their widespread dissemination. A (May 1998) report by the Farm Machinery Unit of Chitedze Agricultural Research Station recommended that "development policy should ... concentrate on the ...

utilization of handcarts rather than the present policy of ox- and donkey-cart advocacy.” AfriCarts were (respectively) awarded third and first prizes in the farm mechanization category of the 1<sup>st</sup> (Lilongwe, October 2003) and 2<sup>nd</sup> (Blantyre, June 2004) National Agricultural Fairs sponsored by the Malawi Confederation of Chambers of Commerce and Industry. These bronze and gold awards were made because the judges recognized the AfriCarts enormous uptake potential as opposed to competing farm mechanization devices.

The AfriCart’s benefits are not confined to the rural agricultural sector. Urban vending and marketing activities are heavily dependent on the availability of transport. One has only to observe any urban marketplace early in the morning and at the day’s end to appreciate the adverse impact inadequate transport has on the lives of vendors. AfriCarts are ideally suited to these small-scale marketing activities, and can readily be built to suit any particular vending application, from carrying long planks, to vending fried potatoes, to repairing watches. AfriCarts are currently being evaluated to be pulled by large (Boer) goats, and are already in use as bicycle trailers. Similar bicycle-wheeled handcarts are widely used in urban Tanzania by water vendors, who routinely carry between 200 to 300 liters of water (weighing up to 300 kilograms) with ease, and with minimal wheel maintenance.

In conclusion, if you, the reader of this paper, truly wish to increase Malawi’s agricultural productivity, and to enhance the quality of life of Malawian farmers, you should advocate for the immediate and widespread dissemination of AfriCart handcart technology to Malawi’s rural and urban poor. The Ministry of Agriculture is currently advocating for AfriCart dissemination via the One Village One Product (OVOP) programme. International aid/development agencies who currently spend millions of kwacha for a single imported motor vehicle, should consider switching some of their funding of motor vehicles to the dissemination of locally-built AfriCarts, which would be guaranteed to make a far more significant contribution to Malawi’s economic development.

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[Published in **Business Voice: MCCI The Voice of the Private Sector** 2004. Malawi Confederation of Chambers of Commerce and Industry. The Editorial, [p.3] by their Economics and Research Department stated: “Transport is critical in Malawi both at household and national levels. AfriCart is part of the solution to transport problems experienced by the smallholder farmer in Malawi. Find more in the article [pp.26-27] by Dr. Arnold P. Wendroff.”

#### **Further Information on AfriCarts in Malawi:**

##### **12 gauge spokes:**

Choonara Highway Emporium, POB 70 Lilongwe 01 726-405/409

##### **AfriCart Builders:**

Hastings Mkandawire, POB 572, Mzuzu 08 351-319

Peter Mugunta, POB 105, Champhira

Durobloc Ltd. POB 153, Lilongwe 01 752-006

Rizik Metal Work, (Steel Carts) POB 181, Mchinji 09 303-509

Chika Mughogho, Chitedze/Lilongwe

Ellaton Mkwate, P/B 206 Blantyre 01 667-880 / 09 951-615

##### **Internet Web Site**

[www.malawihandcartproject.org](http://www.malawihandcartproject.org)