

Inland Water Transport



Issues Paper

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INTRODUCTION

This paper is based heavily on the writer's detailed knowledge of the country boat operations in Bangladesh, supported by first hand, but less extensive studies of a number of other Asian countries, an area of the Peruvian Amazon and the Niger delta. To provide a wider perspective, additional references have been consulted, and these are listed at the end.

The paper does not purport to be a definitive statement of the current status of inland water transport in Asia, Africa and Latin America. What it seeks to do is to create a starting point for discussion amongst people who do have detailed local knowledge. It is hoped that the context will provide a baseline against which comparisons can be made. By comparing similarities and differences, we hope to build up a more balanced and multi faceted picture of the situation in many countries.

The results will be used to identify common themes, highlight differences and develop a basis for policy response and future action at international, regional and local levels.

WATER TRANSPORT IN ASIA, AFRICA AND LATIN AMERICA

Travel by water is very ancient. It predates the wheel and remains a vital part of the transport mix for millions of people in rural and urban areas. Yet in a world which associates roads and motor vehicles with progress and development, water transport is neglected and under valued. In many places around the world, water transport provides crucial links between otherwise isolated communities and between those communities and centres of trade and commerce. The use of boats provides a flexibility and independence that is lost if other modes have to be used.

Water transport is truly peoples' transport. It is familiar, accessible and it comes to the door. It provides local jobs and a transport system which is under local control, serving local needs.

Waterways have long been natural thoroughfares. Cities such as Bangkok, Saigon, Dhaka, and Hong Kong have thrived because of their strategic location on waterway networks. Across the developing world, countless smaller human settlements crowd along the riverbanks. Waterways provide them with crucial arteries of communication and trade.

In heavily forested areas such as the upper Mekong, Amazonia and Borneo, road building is extremely expensive and particularly damaging to the environment. Poor communication is one of the main constraints to the development of people living in these areas. For instance, the people of Ban Muong in northern Laos reported that lack of transport was hampering their trade and limiting their agricultural production. (Mekong News 1991)

In deltaic areas water transport plays a vital role in the economy. In the south of Vietnam there is an extensive network of more than 5000 km of waterways associated with the Mekong Delta. In the Ayeyarwady delta in Myanmar water transport is an important part of the lives of 10 million people since "...most of the Delta region is accessible only by water transport" (UNDP 1989)

TYPES OF WATER TRANSPORT

Inland water transport exists in a wide range of forms, satisfying an equally wide range of needs. As Hilling (1996) says: "While the infinite variety of craft is part of the history of water transport it is also part of the present....The distinct advantage of water transport is this range of technology, unit capacity and ability to respond to and reflect local conditions of environment and demand."

At one end of the size range are small, unmechanised and generally family owned canoes and small boats, used for local errands, visiting and going to market. At the other end are powerful push-tow barge systems used on major rivers such as the Yangtze, Ganges, Paraguay and Zaire and owned by State enterprises or multi-national corporations. This paper is concerned mainly with the smaller end of the spectrum, as it has the most direct and immediate effect on the lives of rural women and men. This end of the spectrum can also be defined as the water transport that operates within the informal sector. The vessels used within the sector are widely referred to as country boats, and this definition will be used in this paper.

COUNTRY BOATS

There are always difficulties in obtaining information about country boats. Because they operate in the informal sector, they are either unrecorded or under-recorded in official sources. Official figures in Sierra Leone indicate that less than 3% of transport is by country boat, yet the real figure is reckoned to be well in excess of 10% (Govt of Republic of Sierra Leone 1995). Their centres of operation are often dispersed and difficult to reach from urban areas and the facilities they use are simple and not highly visible. Lastly, country boat operations seldom have centralised management or administrative organisations, so simply making contact with the operators can be difficult. As Hilling (1996) notes "...statistical information about their numbers, operations and productivity is always likely to be vague but this in no way detracts from their overwhelming importance in local transport in areas such as Amazonia, the Niger delta and Bangladesh."

A major distinction can be made between owner operated country boats and absentee owned boats. Within the owner-operated group, a further level of difference is between own use and commercial use.

USES OF COUNTRY BOATS

For owner operators, water transport has the great advantage of flexibility and independence. When they use a boat to take produce to market, the boat becomes their market stall. This can be seen in the floating markets of Bangkok and Vietnam. On the Zaire River, Michael Wood (1984) describes how local canoes came alongside a large riverboat to buy and sell goods. In the Mekong delta, "each year millions of tons of cargo are transported from one place to another" (Interim Committee 1989)

Boats are also used for fishing on inland waters. In deltaic locations such as Bangladesh, the Mekong and the Niger and lakes such as Inle Lake in Myanmar, these activities can provide significant inputs to local diets as well as a basis for economic trading activity. In the informal sector, the distinction between fishing and transport boats is often ill defined, with the boats being used for a range of tasks. (Intermediate Technology Consultants 1995)

A growing use for country boats is in tourism. With the decline in commercial use of some waterway systems, such as the backwaters of Kerala, traditional boats have proved to have a great appeal to foreign visitors who wish to experience the peace and tranquillity of water transport and river life. (See, for example, Insight Guides 1997)

Country boats thus provide rural employment. In addition to direct employment on the boats the sector also supports ancillary employment for mechanics, carpenters and labourers. In India, employment generated per Rs 100,000 invested is 33.6 persons per year for water transport, 27.0 for bullock carts, 20.0 for coastal shipping, 10.7 for lorries and only 4.3 for railways. (Hilling 1996)

CHARACTERISTICS OF BOAT OPERATORS

In Bangladesh, it is well documented that country boats operate within a complex social network. The people on the boats are closely linked - often they may be close family members. The boatmen obtain their cargoes and other business through personal relationships with traders. These are non-formal bonds based on trust and mutual obligation. 'Traders from longer distances come to market by country boat as they can sleep or play cards on board. Sometimes they cook for passengers on board and attend several *hats* [markets] in the locality. It is like home on water.' (Rahman 1990)

THE TECHNOLOGY OF COUNTRY BOATS

Country boats can be built using local materials and local skills. Wood is the main construction material for country boats. The quantity of wood used is a very small fraction of total consumption, so it is difficult to argue against its use on environmental grounds.

Because country boats are built locally using locally available skills and materials that offer scope for local innovation to respond to changing markets and operating conditions. The shallow draft, slender Pampers of Sierra Leone are a clear example (Government of Republic of Sierra Leone 1995).

Most country boats use diesel engines. However it is a relatively simple matter to adapt them to use other power sources - from steam engines burning biomass to direct solar electric power. Modern design concepts can be combined with traditional building skills to produce boats that are fast enough to compete with road transport while retaining the advantages of accessibility and local input. The long tail boats of Thailand are a far cry from the old paddle steamers and manually propelled craft of yester year and carry their passengers at great speed (Edwards 1990). They are another example of the ability of the sector to innovate and meet changing demand.

By using a high proportion of locally available technology, the operators avoid a dependence on imported technologies and therefore retain control of the developments and ensure reliable operation, maintenance and repair.

The technology of water transport is energy efficient in operation and more sustainable than road transport. The energy use per unit transported is much less than on roads.

INVESTMENT IN COUNTRY BOATS

In terms of capital and operating costs, country boats have a very high carrying capacity and low operating cost. There is more scope for individuals to be able to afford their own boats and hence retain control over their livelihoods. The infrastructure requirements for country boats are modest. Infrastructure can be constructed by communities which are serviced, using local materials and local labour so ensuring that the maintenance requirements are also within local capabilities. Low freight charges can reduce urban price differentials so that rural producers can get higher prices for their products and make cheaper purchases from the urban centres.

SUMMARY CHARACTERISTICS OF THE COUNTRY BOAT SECTOR

Socio-economic

- Operators are rural based
- Mainly owner operators
- Most of their income comes from boat operations
- Generally landless or with access to little land
- Operate without subsidies or help from government, including credit and insurance
- Not subject to restrictions of the formal economy such as taxation or regulation
- Obtain cargoes by personal contacts and relationships
- Relatively disorganised and lacking in influence with officialdom
- Low profile in national planning and development plans
- Lack access to formal sources of credit
- Rely on traditional (high interest rate) sources of finance, so perforce they provide very high rates of return on modest levels of investment

Technical

- Informal, bankside facilities are most commonly used for cargo handling and transfer
- Use informal facilities for construction and repair
- Construction undertaken without reference to drawings or regulations
- Construction techniques handed on by experience and example
- Use materials sourced from local bazaars or markets
- Have a tradition of making do with what comes to hand
- Wood is a very common constructional material
- A knowledge base which is traditional and codified
- Innovative and adaptable to changing situations
- Propelled by human or wind power, or have been in their recent past
- Energy efficient
- Where they are mechanised, agricultural diesel engines are common
- Evolved under varying social and operational influences, so tend to exhibit wide diversity of size and shape
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STRENGTHS AND WEAKNESSES OF THE COUNTRY BOATS

Strengths

- They respond directly to market signals

- They offer a flexible and responsive service for short haul cargoes
- They operate profitably whilst placing minimal demands on national infrastructure and resources
- They are technically innovative
- They operate with very low overhead costs
- They generally undercut Government operated IWT on the basis of price and responsiveness to demand
- They achieve high levels of utilisation
- They provide employment for people with traditional skills
- They are an integral part of the rural economy
- They primarily serve the needs of rural people and the rural economy

Weaknesses

- They operate from facilities which are often difficult for passengers or inefficient for cargo handling
- They are built and operated without documentation, formal design or drawings
- They are difficult to regulate and control
- They have limited unit capacity
- Image of being outmoded and in need of replacement
- Deemed unsafe and unreliable by outsiders and urban people

CONSTRAINTS ON THE DEVELOPMENT OF THE SECTOR

Institutional Neglect

“In many respects inland waterway transport has been the neglected mode and does not usually feature prominently in the transport planning strategies of most countries” (Hilling 1996) An exception is the Government of Vietnam which attaches high priority to the development and improvement of water borne transport in the Mekong delta through recognising that “waterborne transport means so much to the people living there”.(Interim Committee 1989)

This institutional neglect is perhaps the single most important factor that holds back the development of the full potential of inland water transport. Even modern, formal sector inland water transport receives relatively scant attention. The situation for country boats is much worse. Not only are they almost totally ignored, but also when improvements are made for the formal sector, these often result in country boats being excluded from landing places which they had previously used. It is telling that a number of the thick consultants reports listed in the bibliography make no mention at all of country craft – in parts of the world where it is well known that they operate in large numbers. One result of this selective blindness is that country boat operations are not integrated into transport plans, so not only do they receive minimal investment and attention, but few opportunities are made to link their operations with those of other modes. Where country boats are mentioned in reports, it is often in very unsympathetic tones. For example, a report of the Harbour Department in Bangkok contains the following statement concerning ‘river craft’ (country boats) of Thailand: “Modernising the river craft is an essential step towards water transport development. Water transport is indeed often regarded as an old fashioned, if not primitive, transport mode partly because obsolete or unadapted river craft is a common sight in many rivers or canals, whereas modern effective, cost and energy saving craft is hard to find” (Harbour Department 1991).

The perception is not restricted to Thailand. As Jansen (Jansen et al 1985) notes in the case of Bangladesh: “The efforts made by local government institutions to maintain the waterways are very limited and stand out in strong contrast to the attention and financial allocations made to the building of infrastructure on land.” Elsewhere, the same author points out the interaction between the aid process and institutional responses: “Given the pre-occupation with modernization, the recipient is convinced it needs the ‘best from the West’....The aid regime has been instrumental

in devaluing rural based transport assets as well as eroded possibilities for more coordinated decision-making in the transport sector.”

Waterways as Routes for Roads

In places where water transport is viewed as outmoded and inefficient, planners turn their backs on the waterways and try to redesign the settlements to conform to the geometry and demands of the road network. Rivers and canals are eyed for their potential to provide new routes for roads. Waterways are often on government owned land and by definition people do not live (permanently) on them. This makes the task of securing the land relatively simple and roads can then be built without displacing settlements. This is plain to see in modern Bangkok. Once a city of waterways, it is now a frantic maelstrom of cars and lorries fighting for space on roads that were often laid over infilled canals.

Safety

Country boats have a reputation for being unsafe - but this appears to be based more on hearsay than fact. The roads of Bangladesh, for example, are amongst the most dangerous in the world. The death rate on the country's waterways is only one tenth of that on the roads. Despite this, popular (and usually urban based) opinion holds to the view that travel by country boat is intrinsically unsafe, certainly more dangerous than 'modern' road transport.

Speed and Reliability

Country boats also suffer from a reputation for being slow and unreliable. Until recently in Bangladesh, country boats which depended on sails and human labour for propulsion. Their lack of speed and predictability steadily eroded their ability to serve the changing transport needs of the country. In 1985, Jansen (Jansen et al 1985) concluded “The problems confronting the sector are too numerous, too complex, and too much rooted in socio-economic structures...”

Yet by 1993, the sector had transformed itself (BIWTA 1994). A wholesale process of mechanization was almost complete, using local skills, local designs and local money. This significance of this change still goes largely unrecognized in official circles and policy.

Lack of Organisation and Lobbying Power

The dispersed and independent nature of country boats means that the operators tend not to be organized in groups. This puts severe constraints on their power in society and means that their needs and priorities have no platform or access to policy makers. There are some indications that this is changing. In Sierra Leone, boatmen's unions have been formed in recent years. In Bangladesh, several associations have been formed, and foremost amongst them is the Bangladesh Country Boat Owners Association. They now have 32 branch offices and approaching 15,000 members. They have successfully influenced parliamentary decisions concerning country boats and are active in defending the rights of boatmen at the local level.

Official Harassment

Harassment by officials is another problem faced by country boats. “Government officials and police *who demand bribes on the threat of stopping the boat and interrogating the crew.*” (BIWTA 1994).

Inadequate Water Depth

Lastly, and crucially, IWT in many locations faces problems of restricted water depth. This can have many causes, ranging from increased silt levels in rivers, perhaps due to upstream deforestation, cut backs in dredging activities or loss of water level due to offtake for irrigation. It is a problem that is reported in many different locations, including the fast flowing parts of the Mekong, the deltaic waters of Bangladesh and the rivers of Sierra Leone. “Navigation channels,

formerly maintained to an objective draft of six feet, have silted over.” (Intermediate Technology Consultants 1995)

ACTIONS TO IMPROVE IWT ACCESS AND SERVICES

The development of the sector should be viewed as an integral part of rural development rather than a narrow, technical exercise in improving boat design. Equally, it is vital to recognise that as a myriad of independent operators, those in the sector are more likely to respond to small scale, local initiatives than centrally organised Government programmes

Route identification and classification and the provision of navigational aids to increase reliability, speed and safety of operation.

Installation of safety equipment on the boats to improve passenger safety.

Cargo agencies and storage facilities to increase utilization and reduce pilferage and spoilage. Facilities for insurance to improve the quality of service offered to traders.

Reopening and clearing disused canals and waterways to increase the reach and reliability of the services which the country boats can offer.

Selective dredging and river training to increase the length of navigable waterways and extend the operating season.

Construction of safe moorings and durable landing facilities to improve cargo handling and make passenger access safer and easier. “All stakeholders interviewed identified the development of the wharves and the attendant infrastructural development as priorities.” (Intermediate Technology Consultants 1995).

Formation of unions or other organisations to lobby on behalf of the sector for improved shares of resources and a higher priority and status in transport planning.

Registration to improve position in official eyes and reduce potential for official harassment.

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