



BULLETIN

FAL

FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Connecting South America: River mobility and river navigation systems

I. Rivers and mobility

Naturally navigable rivers must be part and parcel of a country's logistical and multimodal transport system, providing an underpinning for social, human and economic development. The environmental effects of developing this system are not negligible, but their scale and the scope for mitigating any physical interventions can be controlled more easily and at a far more reasonable cost than those deriving from other transport options, particularly highways.

Of all transport modes, river transportation has proven to be the most compatible with patterns of land use, population distribution, the supply of and demand for locally produced goods, the distances involved, the current availability of transport facilities and the fragility of the dominant ecosystems with their great biological wealth.

To an extent very rarely seen elsewhere in the world, the navigable rivers of South America (the Solimões, the Ucayali and the Napo, among others) are closely bound up with the local culture, employment, mobility and environmental concerns. Major characteristics of riverside areas are:

- The production of diversified and differentiable goods and services based on the region's natural resources.
- Unique cultures and ethnic groups.
- Highly seasonal products and services.
- Extensive production methods encompassing large areas in which rivers are used to transport the end product.

This being so, the sustainable management of rivers, estuaries and lagoons requires planning and oversight, quality certification, management of facilities and services (infrastructure, vessels, water levels, etc.), appropriate information systems and specific logistics based on transport and storage systems.

This *FAL Bulletin* highlights the importance of rivers in the transport system of South America. Raising the issue of river mobility and policymaking is important not only for the development of river transport but also in view of its social and economic impact, especially in regions where geography complicates the provision of land infrastructure. In such regions, Governments should recognize that navigable rivers, as the only means of travel, take the place of highways and should be placed on the same footing as these in the treatment and consideration given to them.

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Consequently, there is a need for market niches with better margins that could yield price incentives and better production and management practices, alongside innovation and the specific properties of Amazonian products.

The more this desirable future for the economic chain is underpinned by citizen participation and involvement and by international sustainable development conditions, in respect of both climate change and biodiversity conservation, taking into account people's status both as **polluting citizens** and as **consumers** of natural resources, the more sustainable the chain will be.

There seems to be strong potential for short-haul traffic supported by increased endogenous complementarity between river basins. Few or no records are kept on such traffic. Examples include traffic in border areas, where informality prevails, as it does with short-haul trade up and down the extensive networks of Amazonian and coastal waterways. This traffic has the potential to activate production and trading chains when river transport services are introduced or extended.

Until regional river transport improvement projects mature into inter-ocean coverage, economic complementarity and cultural identity are the most promising and concrete fields of action for river basin development, and these are important steps towards the establishment of waterways with all their functions and requirements for the future.

In the case of extraregional product flows using the river system of the Amazon, the Paraguay and Paraná or others as a domestic and international transport corridor, they show viability as a secure, efficient pattern of river-based logistical operations, even if they have not yielded great development along these same rivers, but only indirectly. This by no means takes away from the transport capacity of inland waterways as secure, efficient transport routes, but it does suggest a need for their demonstrated potential to be matched by plans for adding value and improving the structure of the growth they bring to their area of influence.

If progress is to be made with the development of mobility along naturally navigable rivers, however, it is important to be aware of the following:

1. Growth potential depends on regional businesses, especially where short-distance traffic is concerned, both in regional and cross-border economic relations and in those based on intra-estuary complementarity, of which there is generally no official record; and
2. Their main development potential is local and endogenous.

The endogenous or internal-external development of river basins requires measures to boost flows centring on

production, trade and tourism hubs and on the riverside urban centres that are most important by reason of their size, location or strategic function. Specifically, these are local, national and regional flows that are associated with these regions' natural resources and could represent sustainable business underpinned by multimodal transport systems that are compatible with sustainability criteria, as river transport is.

Gradually expanding such local flows to the national and regional levels,¹ including cross-border flows, is the key to long-term viability for a national and regional integration process, with the development of corridors and the establishment of waterways in the South American region and in global markets.

Thus conceived, development involves a process whereby growth potential spreads from local, national or regional flows to extraregional flows. There is accordingly a need for a set of tools and projects for the development of river mobility that can bring together the whole range of facilities needed to put the conditions for development in place. This means thinking in terms of a number of medium-sized and smaller facilities associated with the major facilities already detected for the development of river mobility, and for this there will have to be a change in the strategic vision of this transport axis which, as already pointed out, means bringing the totality of development capabilities into play.

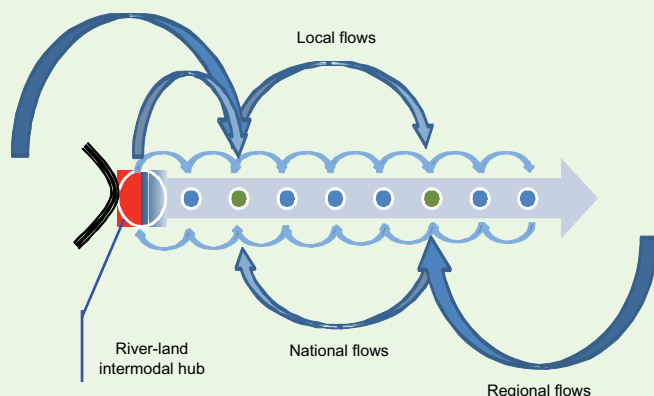
To initiate the mobility development process, what are proposed are "pinpoint" projects and immediate actions that are preponderantly local in their influence but also tend to improve conditions at other levels, as they form part of a network of infrastructure and services.

"Pinpoint" projects and immediate actions are small-scale, well-sited interventions that have the capacity to bring other complementary dimensions of development to their environment. These dimensions include social and productive development, partnership and linkage, technical and economic rules and regulations, institutional development, regional and international judicial organization and environmental protection.

In addition, a portfolio of "pinpoint" infrastructure projects, together with complementary social, environmental, economic and institutional development actions as part of a shared and complementary strategic vision, should drive a process involving a spatial reconsideration of development (see diagram 1) in each basin and of its goods and services flows whereby specifically international development is the outcome of strong regional flows, these being underpinned in turn by the competitiveness and comparative advantages of surplus subnational and local flows.

¹ The word "regional" in this document refers to transnational flows.

Diagram 1
THE DIMENSIONS OF RIVER MOBILITY



Source: Prepared by the author

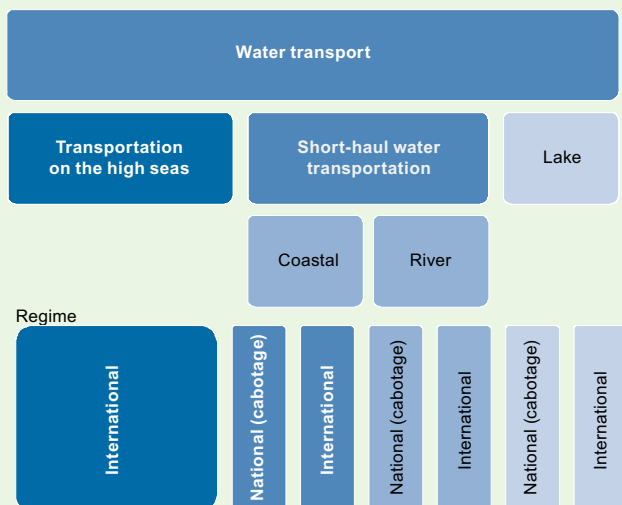
Note: Circles represent jetties (green = regionally important within the country, red/blue = port with intermodal interface, blue = port of local importance).

II. Relevant definitions and concepts

A. The water transport system

The overall water transport system will now be defined so that the context of river mobility can be understood. This system is defined by a number of subsystems that are complementary and overlap at certain points. In its totality, water transport includes all national and international sea, river and lake passenger and cargo transportation services. Diagram 2 shows the organization of water transport subsystems and the regimes under which services can be provided in each of the subsystems. The present study focuses on river transport subsystems.

Diagram 2
SYSTEMIC CONCEPTUALIZATION OF WATER TRANSPORT



Source: Prepared by the author.

The Paragua and Paraná river system, parts of the Solimões and the Orinoco and Brazil's Hidrovia system are corridors along which large volumes of the domestic and external trade of the region's countries move.

On many of the region's rivers, meanwhile, flows of river-going trade and passengers moving locally, subnationally and in parts of the region's basins are much more substantial than international or cross-border flows, and greater too than river-going activity is commonly perceived to be (Bara, Sánchez and Wilmsmeier, 2006).

These circumstances reveal two patterns of importance for the future development of river mobility, which a country's authorities should pay particular attention to. The existing structure is the basis on which international and regional flows will develop.

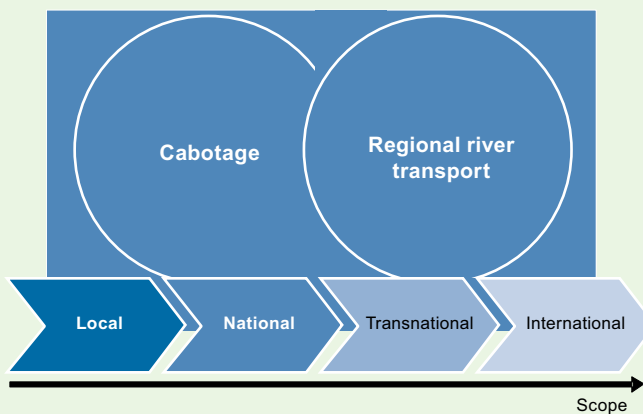
B. Definition of cabotage

Cabotage is defined as the commercial transportation of cargo and/or passengers between starting and end points in the same country. Etymologically, it means sailing from cape to cape, and it probably derives from the French word *caboter*, which refers to navigation between capes (or from cape to cape), with the skipper setting a course from one to the next along the coastline when sailing to a distant destination.

Taking the example of the Napo river corridor connecting Ecuador with its neighbours, a situation that could be replicated in many other parts of South America, these transport services within a country may only be provided by firms from that country, and foreign firms are not allowed to operate them (irrespective of the mode of transport and equipment such as ships, lorries, etc.). By way of example, an Ecuadorian-flagged vessel may carry cargo from Francisco Orellana to its final destination in Rocafuerte. In some countries, and under certain conditions, there are waivers to facilitate cargo transport between particular points, but there is no general regional or subregional regulatory framework to facilitate the provision of cabotage services by foreign firms in the region. Diagram 3 shows the scope of the different types of water transport services and the overlap that exists between them. For example, a transnational river service might also serve domestic demand generated along a particular route. However, current regulations in the region do not allow it to meet this demand, and this also has an impact on the economic viability of cabotage services and transnational river transport services.



Diagram 3
THE SCOPE OF RIVER TRANSPORT SERVICES



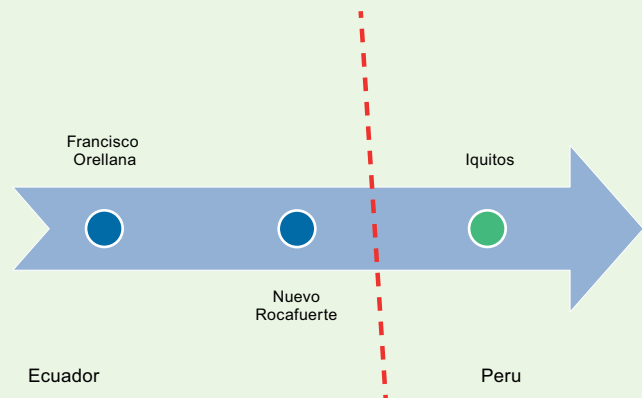
Source: Prepared by the author.

Political acknowledgement of the restrictions created by cabotage regimes has led to discussion of opening up cabotage in certain countries and to the term “regional cabotage” being coined. Strictly speaking, the term regional cabotage refers to a regional and/or subregional regulatory framework allowing firms from one country in the region (subregion) to transport cargo between two ports in another country in the same region (subregion). If this idea came to fruition, it would mean a Nicaraguan firm with a Panamanian-flagged vessel could transport cargo between two Salvadoran ports such as La Unión and Acajutla, which is not allowed as things stand.

However, the regional cabotage concept has often been misinterpreted, which means that it is vital to recommence the discussion about the potential of transnational river transport based on a clear understanding of cabotage.

This being so, it seems interesting to raise the issue of “consecutive cabotage” in the area of river transport, this being defined as journeys that provide services between two ports in the same country followed or preceded by a journey to or from another country. Crew regulations fall within the competence of the country where the vessel is registered. See diagram 4.

Diagram 4
AN EXAMPLE OF CONSECUTIVE CABOTAGE



Source: Prepared by the author.

Flag rules apply only when goods and/or passengers are actually transported on the international leg of the journey that comes before or after the national leg. Otherwise, shipowners could circumvent the rules of the host country by adding a fictitious international leg to their cabotage route.

The concept of unilateral and reciprocal consecutive cabotage could be a first step towards common regulation of cabotage within the South America subregion. The goal should be to implement cabotage regulations in South America (UNASUR) on a comparable basis to the European Union (see Council Regulation (EEC) No. 3577/92, Com/2003/595 and Com/2006/196 for details), whereby regulation of water transport (sea and river) of cargo and passengers between two points in South America would apply the principle of free movement of waterborne services and require countries to permit vessels flying the flag of a South American country to operate freely, or at least apply this principle bilaterally.

III. Essential services

It is important to stress that in the river systems of South America there are areas where water transport (river and sea) is vital for remote, island and peninsula communities because only water transport connects and provides access to these regions.

In combination with other factors, these circumstances mean that market forces have not provided the essential minimum of connectivity and accessibility. For this reason, a framework is needed that can be used to define these circumstances while at the same time enabling the public sector to intervene with incentives, be they financial or operational, to establish a minimum level of accessibility with defined service quality.

River transport of passengers and goods is vitally important for people living along navigable rivers in the region's remotest areas, and rules should accordingly be drawn up to promote and develop river connections that the market does not adequately provide for.

From the standpoint of the public sector, the provision of essential river mobility services presents a dilemma. On the one hand, the public sector tries to ensure a minimum level of services for a specific community or region, even if potentially the service may be financially unviable and thus require a public subsidy. On the other hand, the public sector must ensure that a provider operates the service at an efficient level of cost and with the smallest possible subsidy, while the operator must see to it that important quality aspects are improved or at least maintained.

Any river transport policy must also seek to analyse the conditions that could be put in place so that public intervention can incentivize the development of services and progress with regional development in particular.

The government will have the option of partially restricting market freedoms and competition by imposing what are known as public service obligations, these being defined as an obligation placed on water (and especially river) transport services between two ports/jetties serving a peripheral or developing region, or a low-density route when this is considered essential to the economic and social development of the region and the country.

In accordance with the conditions laid down in a country's regulations, the government will have the option of enforcing public service obligations to ensure the adequacy of regular river transport services in a basin or estuary when the country's shipowners, consulting their own commercial interests, do not provide a service to an adequate level or under the same conditions. In any other case, the free market should be left to operate.

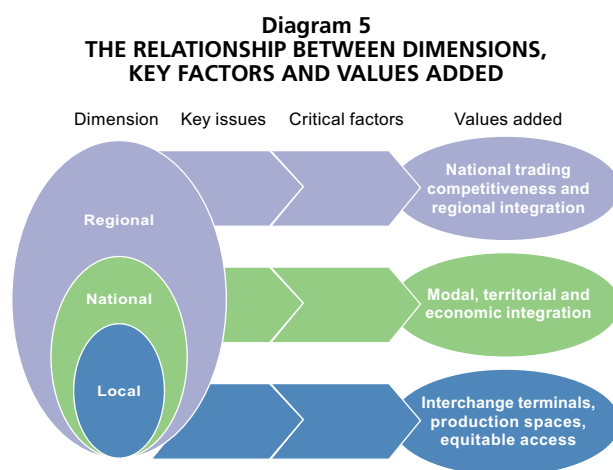
When imposing public service obligations, the government should limit its intervention to essential requirements

in respect of all the country's shipowners interested in providing a service on the route concerned. This requirement must be strictly complied with when the substance of the obligations to be met is decided on and in the administrative procedure that has to be followed to select the operator for a particular service or a service for which the amount and form of compensation is being established. For a long-term strategy to be possible, a country should have a river mobility policy that is integrated with its other transport, mobility and logistics policies.

A. A river mobility policy implementation strategy

The strategy for a river mobility policy must be developed on three levels. These levels are not self-contained, and the following diagrams show how the different dimensions interconnect and information moves between them. The key aspects, critical factors and values added described in each dimension are expected to be most efficient in this structure, the emphasis being on the concept of complementarity. It is important to stress the importance of the local and national dimensions, where the government mainly acts.

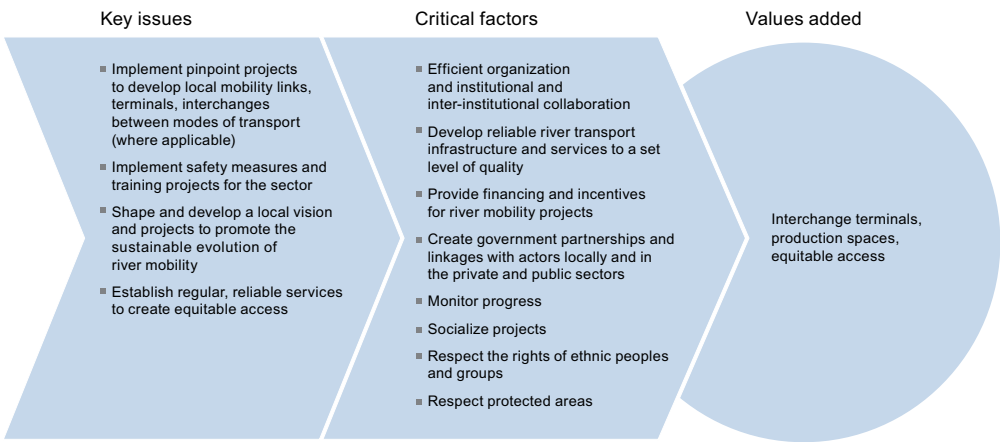
Diagram 5 shows the policy dimensions to be considered, key issues and associated critical factors, and in a general way presents the values added at each level by addressing the key issues.



Source: Prepared by the author.

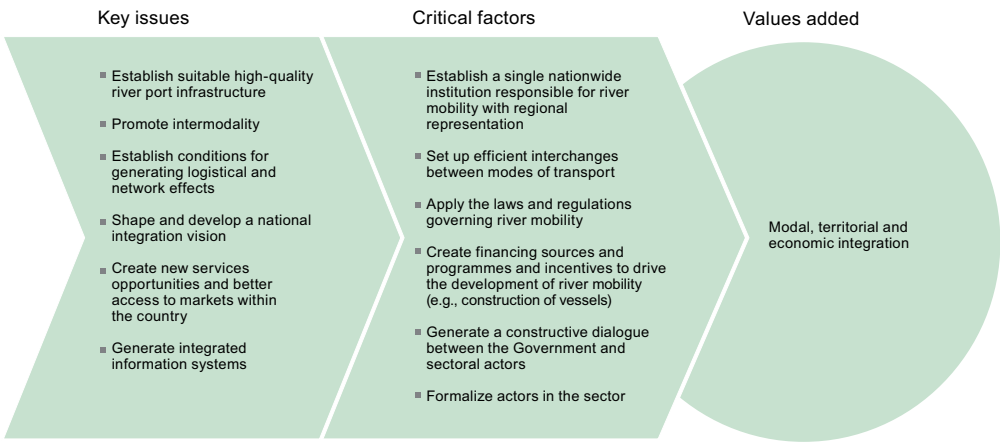
The key issues, critical factors and values added at the local, national and regional (transnational) levels are shown in diagrams 6 to 9.

Diagram 6
KEY ISSUES AND CRITICAL FACTORS AT THE LOCAL LEVEL



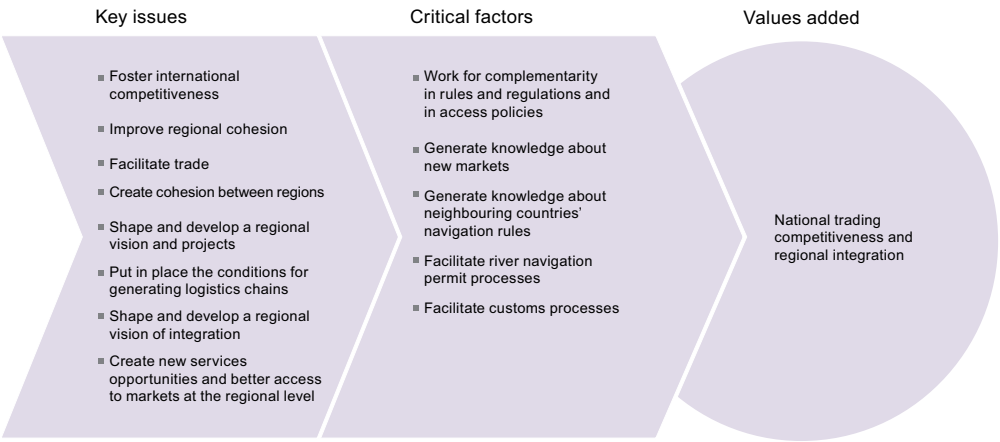
Source: Prepared by the author.

Diagram 7
KEY ISSUES AND CRITICAL FACTORS AT THE NATIONAL LEVEL



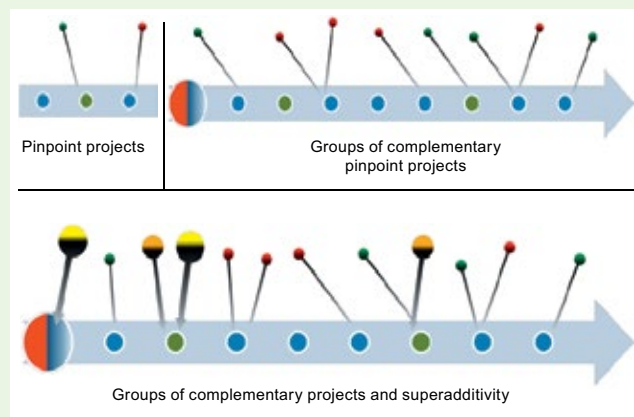
Source: Prepared by the author.

Diagram 8
KEY ISSUES AND CRITICAL FACTORS AT THE REGIONAL LEVEL



Source: Prepared by the author.

Diagram 9
PINPOINT PROJECTS AND INTEGRATION WITH THE CONCEPTS
OF COMPLEMENTARITY AND SUPERADDITIVITY



Source: Prepared by the author.

Finally, the different dimensions will come together to create a matrix of actions, projects and tools, taking account of analytical areas and development capacities, to form a portfolio of projects.

Consequently, consideration of projects involves the assumption that a superadditivity principle comes into play for the benefits expected from them. Although costs are additive, benefits multiply with each project and action and thus are much greater.

To sum up, a portfolio of complementary projects needs to be designed in order to truly create the conditions for development and facilitate national and regional integration.

However, the challenges that need to be met to develop river mobility have to be recognized. They can be summed up as follows:

- Use appropriate infrastructure (ports and terminals that suit the geography of rivers, warehouses and large-scale distribution centres, suitable territorial access) and mobility services to change the emphasis of development, with a mix of large, medium-sized and small enterprises.
- Establish a systemic, comprehensive approach to transport and logistics in the country.
- Reorganize administrative structures and enhance institutional capabilities and financing allocation capabilities at the national level.
- Work to make the transition from naturally navigable rivers to waterways, by facilitating logistics and navigation: up-to-date mapping systems, signposting and maintenance of shipping channels so that regular

transport and logistics services can be provided on waterways based on sustainable infrastructure, with interventions that do not result in distortions to watercourses. Investments in inland navigation infrastructure, including both construction and maintenance, are crucial for lowering costs and reducing informality.

- Recognize that transport costs are currently high and adversely affect economic activity locally, nationally and regionally.
- Establish and coordinate rules and the national regulatory framework for the use of navigable waterways, procedures and oversight for navigation and vessels, and the prevention and punishment of illegal acts.
- Train the workforce in the sector.
- Formalize the inland navigation and port services sector, especially small and medium-sized businesses.
- Improve river safety.
- Analyse development initiatives and programmes for their environmental, economic and social impacts, especially in view of the particular natural features of the environment.
- Ensure that development initiatives and improvements in the provision of infrastructure and services are based on a fiscal foundation that is sustainable over time, since service irregularity is also a negative factor that affects development.

For public policymaking purposes, it is advisable to have a system for articulating macro problems. Among the difficulties afflicting the sector, the following are the main weaknesses:

- Lack of coordination and integration of bureaucratic processes when it comes to detecting needs and implementing solutions. This process often takes years, by which time whatever has been proposed no longer makes sense.
- The historical legacy of low or non-existent budgets for building river infrastructure (terminals, signalling, etc.), where areas such as infrastructure maintenance are inadequate to counteract the effects of wear and tear, so that much of what little river infrastructure now exists is in a very poor condition.
- Very weak compliance with rules and a low level of oversight, perhaps because of the limited technical capabilities of officials in the sector and a complete lack of technological innovation.
- Another major weakness is dispersal and lack of coordination between the different institutions

responsible for mobility, with little communication between them and even fewer points of contact between sectors and with other major actors.

The result of all these failures is that the region's countries now have an underdeveloped river sector, inadequate and obsolete infrastructure, and few or no specific laws and regulations, such as special technical rules and institutional arrangements, of the kind needed for the sector to make its full contribution to the country.

IV. Sectoral policy outline

Like other policies in the sector, “public policy for mobility and logistics” is an intersectoral planning tool that provides a complete logical framework of action for the transport sector with a comprehensive (infrastructure and services) long- and medium- term approach to the creation of a national transport system, offering a working mechanism that in the short term provides a new approach to the comprehensive planning of development in the sector, in coordination with other interrelated sectors, recognizing this as a vital element of strategic support for sustainable development.

This framework incorporates a new conceptual orientation aimed at meeting the mobility needs of people and goods with a local, national, regional and international emphasis and with the required levels of accessibility, comfort and safety, which can be provided by putting in place physical infrastructure and services for the road, railway, river, port and airport network in a way that breaks with the traditional paradigm of treating infrastructure in isolation from the services provided on it, and takes a systemic and comprehensive approach.

Although there is much more to logistics than transport and mobility, it has been included in this formulation because of the important role transport plays in the supply chain. Without efficient transport, logistics makes no sense.

Given what has been said, furthermore, efforts must be made with existing facilities to harmonize the adaptation and development of chain (multimodal and intermodal) transportation to improve logistical processes and establish the rivers of the South American countries as hubs for the interchange of cargo and passengers beginning and ending their journeys in the rest of South America, in view of their privileged geostrategic position within the continent. Thus, river mobility policy is an integral and complementary part of mobility and logistics policy.

V. Public policies

River mobility policy is the broadest basis for river traffic and transport policies.

The most important goals when it comes to improving the potential for development, transition and integration of the river transport system are:

- To create a basic level of port and navigation infrastructure.
- To establish a network of jetties and ports.
- To ensure access is equitable by creating and developing a system of public river transport in outlying areas.
- To improve and standardize the fleet (minimum standards that must be met for different activities), increasing the average environmental performance, safety and energy efficiency of river transport.
- To establish systems of information, follow-up and oversight so that timely and relevant actions can be taken.
- To make the management of public-sector bodies more efficient so that needs and requirements are properly met.
- To improve service connectivity and reliability.
- To integrate the river transport system with the country's other transport systems.
- To create new markets and foment the establishment of services and innovation in river transport.
- To improve the environmental performance of port infrastructure.
- To introduce and improve safety and security measures.
- To reduce the risk of obstacles to navigation.
- To integrate and link up the institutions involved.
- To train actors in the sector so that a basic standard of competitiveness in river transportation is attained.

A. Policy and strategy

The private sector needs to work efficiently and effectively with support from the public sector, and vice versa, following properly agreed management models.

As the authority responsible for supervision and implementation, the government must have an integrated, complementary vision for river management that balances the needs of all actors, given that ecology, agricultural and extractive production, the water supply, recreation and transport all compete to use navigable rivers.

For this, the government should:

- Create navigation rules.
- Classify rivers by their navigability.



- Register vessels.
- Certify and register operators and crews and standardize navigational assistance.
- Implement appropriate infrastructure, information and services on navigable rivers.
- Implement infrastructure, information and services to support the transition of navigable rivers identified as future waterways.
- Monitor, oversee and ensure compliance with the rules laid down.
- Ensure respect for protected and socially sensitive areas.

In all these tasks, the government should be guided by international norms and seek complementarity between its rules and those of neighbouring countries.

The government must also ensure fair competition by laying down the rights and obligations of different river users.

The government needs detailed information to take informed decisions, so collecting and disseminating information is another task for it. This information must also include information on the navigability of rivers. To provide this information for the use of the government itself and the various actors, modern information systems must be in place to support decision-making.

Users are required to inform themselves about potential restrictions on navigability and the risks of non-compliance with the rules prescribed.

River mobility in the countries of South America is socially and economically important, especially in regions where the provision of land infrastructure is complicated by geography. In these regions, governments should recognize that navigable rivers, as the only transport routes, take the place of highways and should therefore be put on the same footing in the treatment and consideration given to them.

