

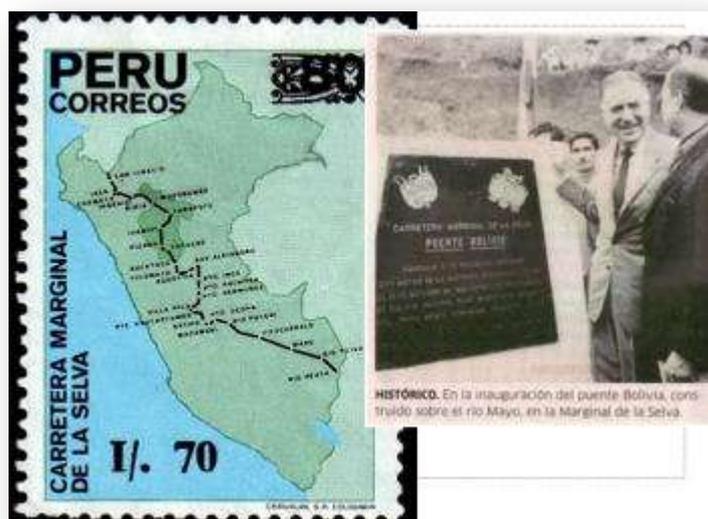
In November 2012 Tony Morrison and John Forrest gave the Anglo Peruvian Society in London an account of the InterOceanic Highway after its first year of completion. With two speakers the presentation ran for 1hr 45 m and this page presents the main points. Many of the illustrations have not been included.

The InterOceanic Highway: The missing link in the exploitation of Amazonia?

For decades a road linking the Amazon heartlands to the Pacific Ocean was on the drawing board. It is now a reality with the opening of the InterOceanic Highway connecting southern Peru and its ports to the Brazilian states of Rondonia, Acre and beyond. Will this open up the rainforest to extensive soya bean farming and cattle ranching to supply Far Eastern markets or will it bring a range of economic and social benefits for the local people?

*The author and filmmaker, **Tony Morrison** and **John Forrest**, Chairman of the Tambopata Reserve Society, will take us on a journey along the Highway. John recently travelled the lesser known 'Route 4' link which runs from Juliaca to Puerto Maldonado where Tony, who was travelling along the Highway just a few days ago, will continue on in to Brazil. Both speakers will reflect on the likely impacts of the Highway on Peru.*

John opened the evening by looking back to the 1960's and the birth of the road plan.



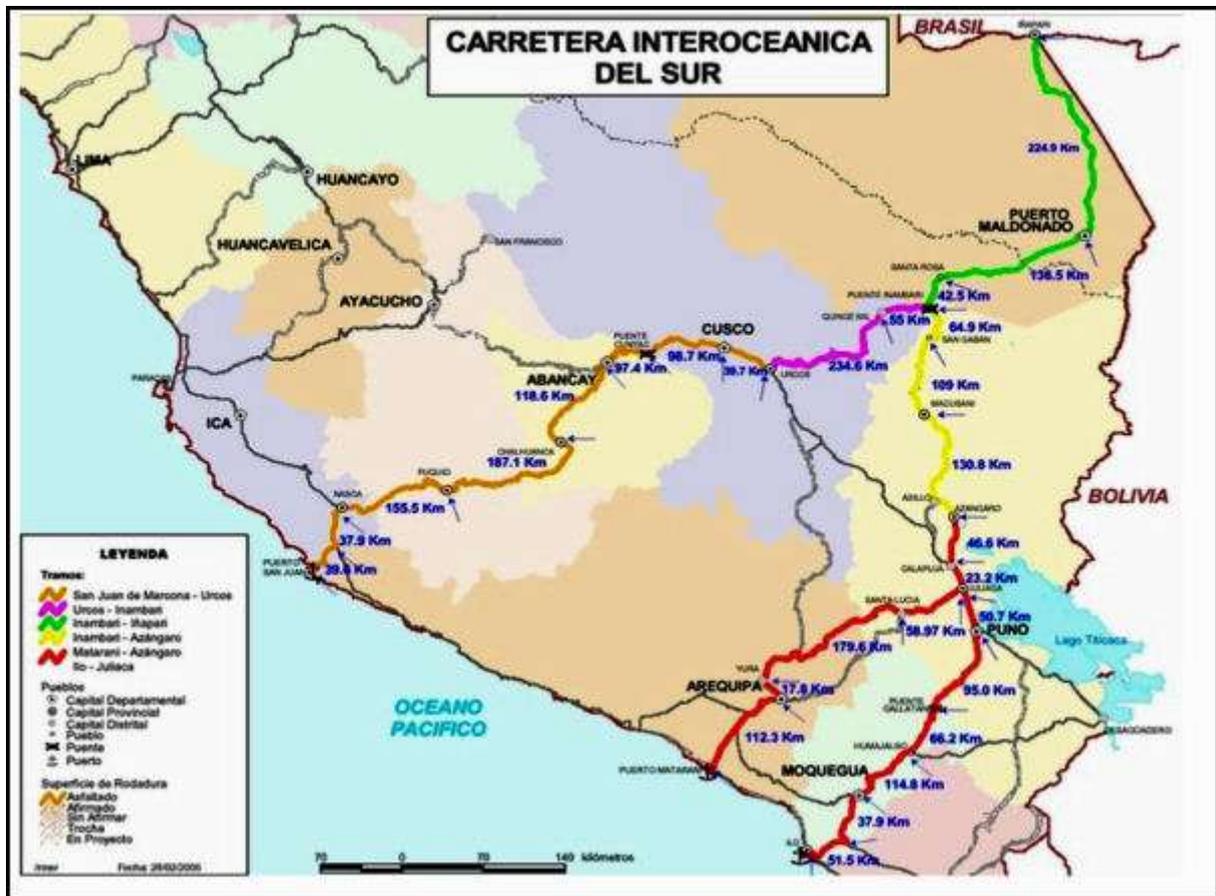
Peru's President Fernando Belaúnde [1963 -1968] and a second term [1980 - 1985] was an architect by training and a politician who pushed for road building to integrate distant parts of the country. Belaúnde began the construction of the Marginal Highway [Carretera Marginal de la Selva] a route along the forested eastern flank of the Andes mountains and joining existing trans-Andean roads crossing to the Pacific. Another Belaúnde plan was to link Peru with the Brazilian road system then being developed in the Amazon basin.

Even more ambitiously Belaúnde had a grandiose plan to move the Peruvian seat of government from Lima to the Amazon. Some would say his plan was simply a dream

based on the creation of the new Brazilian capital, Brasilia [built 1956- 60] and sited in the centre rather than on the coast. In the case of Peru almost sixty percent can be called Amazon land and most of it is sparsely populated - for Belaúnde it was a region to be opened-up and used.

The newly completed InterOceánica Sur road linking the Pacific ports of Ilo, Matarani [see *Islay near Mollendo*] and San Juan de Marcona on the Peruvian coast is a marvel of planning and construction. A consortium of Peruvian and Brazilian companies led the giant Odebrecht and Camargo Correa were responsible for the work financed in the order of 1.9 billion US Dollars by international development banks. The work was divided between the companies with each working on different sectors or tramos.

Looking eastward towards the Amazon forest two routes lead over the mountains





Tramo 4 from the mountain town of Azangaro 27 kms almost due north from Lake Titicaca has a highest point of 4725m and Tramo 2 from Urcos near Cusco famed for its Inca remains reaches 4850 m . Both roads lead down the eastern Andean slopes through dense mountain rainforest recognised worldwide for its rich and probably unparalleled biodiversity. The routes join at Puente Inambari in the foothills 375 m above sea level and continue for another 179 kms to Puerto Maldonado, a town of about

92,000 [2005] and the capital of the Madre de Dios Region.

Puerto Maldonado has been connected by road to the highlands for many years but a journey from Cusco was usually counted in days. In the rainy season it could take a couple of weeks and sometimes the route was totally impassable.

Now there are at least two bus services per day to Puerto Maldonado and weekly direct buses from Lima and São Paulo. Inevitably migrants are heading to Puerto Maldonado and towns along the road where they settle and work. One estimate says that there are 200 new arrivals per day.

Farming along the roadside is still modest with families clearing and forest and planting crops such as *yuca*[manioc / cassava].The *chacras* [cleared patches] are clearly visible on satellite images.

Of major concern is the unregulated gold mining in the lowland forest east of Cusco. The area has always attracted gold seekers and groups of men eagerly wash for gold along the riverbanks while others seek deposits under the earth. One of the most notorious sites is Huaypetue in foothills about 10 km east of the road near Santa Rosa. The scar is seen very easily on Google earth. Huaypetue reached its peak in the early 1990s and now the



prospectors are looking elsewhere.

Men earn several dollars a day and it has been estimated that the annual production is about 30 tonnes of gold. To separate that gold about 30 tonnes of mercury and other chemicals are used. Environmentally it is a high price as the mercury and its residue ends up in the rivers.

At the beginning of this year [2012] the Government imposed controls and miners are expected to register and work within a 500,000 hectare corridor bordering the river.

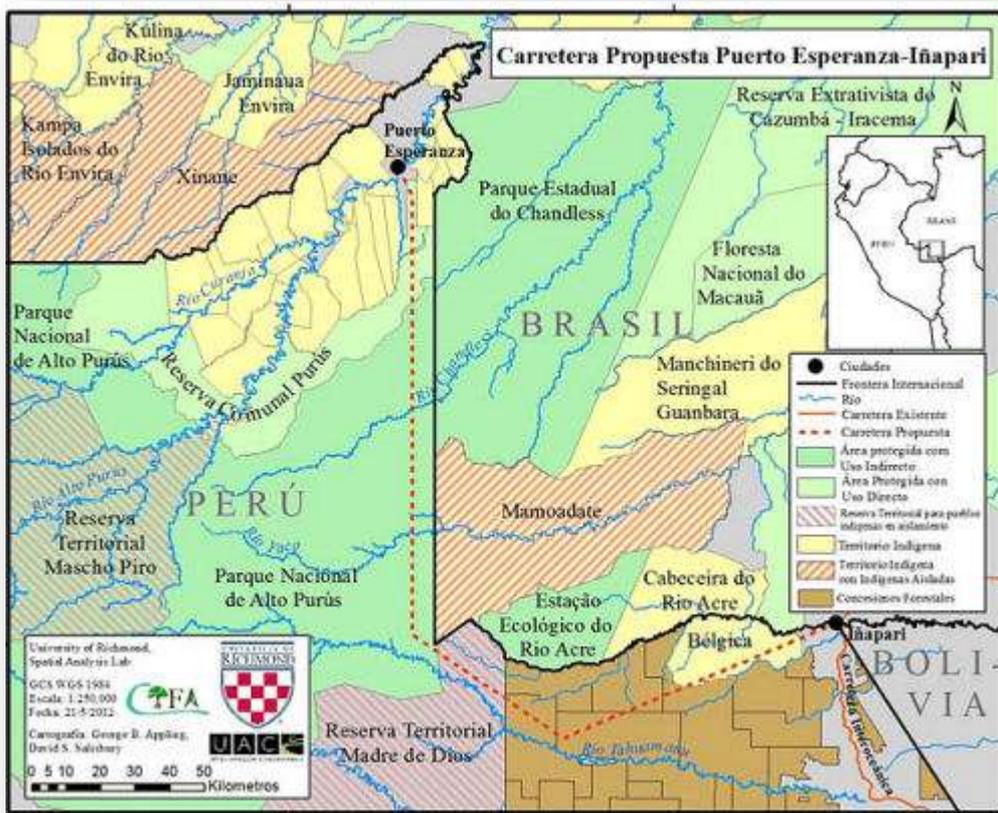
Clearly Puerto Maldonado is growing though exact population figures are not available - the 2005 census counted 92,000 and by some estimates that has doubled.

Serious attempts to attract tourists began in the late 1970s and it is now a popular destination for eco-tourists from around the world. The Tambopata river has more than a dozen 'lodges' - rustic hotels and on most days two flights arrive from Lima via Cusco. All of the lodges provide tourist with a canoe journey on the Tambopata river and a night in the jungle. But some do more with specialist guides for bird spotting or closer to forest living the Baltimore Project for Rural Tourism offers accommodation with families settled in the forest.

Fortunately large areas have been given some protection. The internationally renowned Manú National Park and World Heritage Area includes some headwaters of the Madre de Dios river. The Bahuaja Sonene National Park running next to the Tambopata National Reserve, the Amarakaeri Communal Reserve for indigenous communities and the Alto Purus National Park embracing the headwaters of the Purus river a major Amazon tributary

This is how the limits are set out today but past experience reveals that the boundaries can be moved if deemed in the National interest. This was done in 2007 when the area of the Bahuaja Sonene was reduced by a third to permit future gas and oil exploration.





The forests of the Alto Purús are almost pristine and the only significant settlement is Puerto Esperanza with about 4000 inhabitants. There is a move amongst the population to get a road built connecting with Inapari the frontier town. This proposal has opponents as the forest close to the Brazilian border is home to an unknown number of indigenous families.

The people and their simple forest homes have been

filmed from the air but so far no contact has been made on the ground. Other tribes live in the forest between the Alto Purús and Rio Las Piedras and they made news earlier this year when they were seen by tourists.



In Puerto Maldonado the road is now a fact and the bridge the 722 m *Puente Continental* - the longest suspension bridge in Peru has been open to traffic for over a year. For the people its presence is inescapable as it the access roads with massive concrete barriers dominate the centre of town. Such planning would be impossible here in Britain.

At this point Tony Morrison continued



The bridge has a fascinating story. It is the longest suspension bridge ever constructed by the Austrian engineering company, Waagner-Biro. It was ordered back in the late 1970s and when the parts arrived a shortage of cash and the lack of infrastructure such as a road, left the parts sitting idle in a warehouse for about 25 years. All that changed with an Peruvian-Brasilian accord to fulfil the long cherished dream of an inter

oceanic route.

It is hard to imagine that this huge river - it rises by at least ten metres in the rainy season - it is also hard to imagine that it is not navigable all the way to the Amazon. But on the way it joins two major rivers - here I'll just name them. The Beni comes in from Bolivia - one of it's tributaries is that polluted trickle that runs through La Paz - another is the Mamoré coming in from southern Bolivia with tributaries such as the Piraí the river of Santa Cruz de la Sierra - and these with many finally they become the Madeira, the Amazon's great tributary. This huge river then pours over series of giant rapids which to date have blocked the way to upstream navigation.

The road north from the Madre de Dios crosses one famous river - the Tahuamanú - in fact, the town here - Iberia was once called Tahuamanú. Its history is tied to the late

19th Century and the story of rubber when the near feudal control of the area was making fortunes for absentee landlords . Some of you may recall the film and book *Lizzie* I created for the BBC in 1985. Lizzie, a young Victorian woman spent the final days of her short life on a rubber *barraca*, a collecting point downriver from here



The Tahuamanú eventually leads to the Amazon via the river Beni and the rapids. Here is the Tahuamanú near Iberia - taken from the road bridge.

About At the border about 60kms onwards the road crosses the Acre river - also with a great rubber era history - but unlike the Tahuamanú with its route to the Amazon blocked by rapids, the Acre river flows to the Purus - It is shallow and without rapids. In high water the Purus is navigable for 2600 kms to the main Amazon - no wonder that in the Rubber Era small ocean going steamers were seen not far from here

And before leaving the border there is a final curiosity - the settlement of Bolpebra in Bolivia - just 1500 metres from the Aduana - Customs Post . It's the place where Bolivia, Peru and Brasil meet - it's a fairly fluid frontier you could say.

But now looking at the future use of the InterOceánica maybe a few tips can be gleaned from the history of the rubber era as the size of the profit from rubber trees depended largely on the cost of transportation - Tahuamanú rubber had to go out via the rapids - that problem in turn spawned a couple of railways and one immense fortune - Nicholas Suárez, a Bolivian who made his money by transporting goods around rapids at a place on the Beni river he called *Cachuela Esperanza* - the Rapids of Prospect.



Rubber was taken downriver around the rapids and goods imported from Europe went upriver. Suárez became so powerful that ran his own private army - I mention all this because in Amazonia today the cost of transportation is all important - remember - Amazonia is much the same size as the continental USA

In the past five years I have made five long bus journeys across Amazonia - choosing a comfortable bus instead of a canoe or hacking through forest as I did in the past. Perhaps a comfortable bus reflects my status as a Senior Citizen and. also reflects on a changing Amazonia - one in which good bus travel is possible and the penetration of the original wilderness from every direction is going ahead at a remarkable pace.

After my first bus journeys I sensed that my wife Marion - who has anything but fond memories of mosquitoes and canoe travel didn't believe my stories . But recently she has joined me and seen what I am calling the New Amazonia as - indeed - it is very much part of modern Brasil

By **New Amazonia** I do not mean that all the forests have gone - AND I'm not going to join in with the haggling over percentages being cut or still standing or the concern over



carbon dioxide and climate change or the controversy over the use of Amazonia as a resource - that is for others and another time.

Here I will show just a few pictures and you can see how towns and cities are big. And growing quickly - Just a few names you may know

Porto Velho - in 1950 its population was 5000 now it is 436,000 and it has a newly completed bridge across the River Madeira

Manaus - once thought of as the centre of the Amazon now has 2 million people, a special incentive industrial zone turning out hundreds of goods ranging from smartphones to motorcycles. AND a new bridge 3.595 kms long built across the Rio Negro - started in 2007 opened last year.

Sinop - You will not find this place in older atlases - it was back in 1972 that the first roads were set out in the middle of the Mato Grosso - *The Denser Forest* - that magical name for a wilderness so much talked about in the early twentieth century

Sinop is now somewhere in the middle of all these soya fields and has grown to over 110,000 people [2010] The name is an acronym for the name of the company that founded the town.

Cuiabá on a river of the same name draining to the Plate system is the gateway to the Mato Grosso - it is another city of a million or more. In 1950 the population was just 62,000

My list could be endless so I'll stop here - So what brings people into Amazonia ? Farming, small industries and minerals. And the products? How do they export them? - Soybean is the most talked about as it is sold internationally with 29 million metric



tonnes going from Brasil to Asia in 2010. [28,739, 253 metric tonnes]. Mato Grosso was the major producer

So returning to the Interoceánica and the theoretical export route from Amazonia via Peru's Pacific

ports.

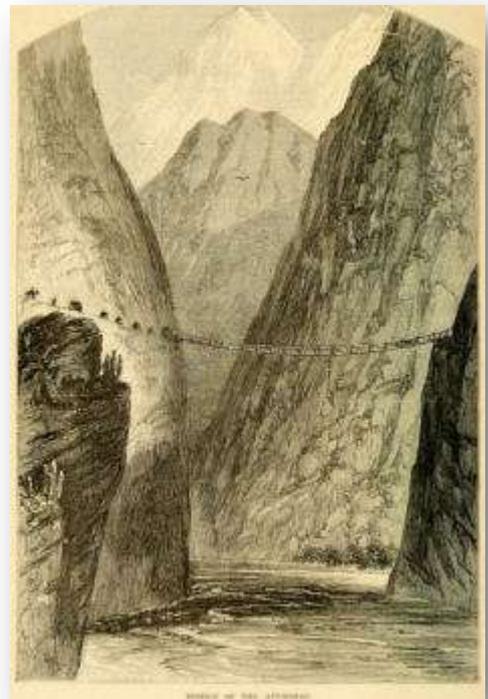
It is my belief that the cost per ton is too high as even in 40 tonne trucks there would be the extra cost of fuel to climb over the Andes mountain ranges. The cost of transporting the fuel and the cost of financing the drivers and return journey.

Just take the northern route over the 4,750 Pass of Pirhuayan and down to Urcos near Cusco. -- From Cusco to the Pacific is not downhill all the way and there are formidable barriers to cross. One of the most notable obstacles is the canyon of the Apurimac river flowing from the south and reckoned as the Amazon's source.

The canyon is over 2000m deep and the road goes down to the river and then out again with a series of hair-raising bends.

The obstacle has been known for centuries and in Inca times a great bridge of ropes made from twisted dried grasses crossed the river. .. It inspired Thornton Wilder to write of the *Bridge of San Luis Rey*

Beyond the Apurimac going westward are the heights of Yaurihuiri at over 4300 m that together with shorter climbs along the way that would add up to over 9600 m of uphill driving for the truck drivers or about 800m more than an ascent of Everest [8,848]



Can you imagine a line of about 1500 trucks [lorries] grinding uphill in low gear and then through snow covered passes?

About 1500 trucks would be required to carry the same as a Panamax grain carrier ship [*Panamax = the largest size of vessel able to pass through the current Panama canal*]

The southern route leading to Ilo and Matarani has to climb to the Abra Oquepuño at 4850m which is 40 m higher than Mont Blanc, Europe's highest mountain and then after a short descent the road has to climb another 700+ m before eventually heading downhill to the Pacific. As far as I can see the total uphill driving from the eastern Andean foothills on this route would be over 5300m.



Can you imagine the 2011 Rondonia soya production alone, of 446,000 metric tonnes being taken in 40 tonne trucks to the top of Everest and then down again before being shipped? That would be crazy not just from the Dollar cost but the pointless waste of energy.

Acre, the Brazilian state with the best connection to the Interoceánica is not yet a major producer of soya. Among the State's production are brazil nuts, natural oils and latex - used for organic condoms made in a factory in Xapuri on the Acre river.

You can see how the figures for long haul road transport of soya do not add up commercially. In the adjacent state of Mato Grosso the soya harvest in 2011 was 22 million metric tonnes. Just try putting that into 40 tonne truck units - it is done today but tomorrow there will be a specially built railway.

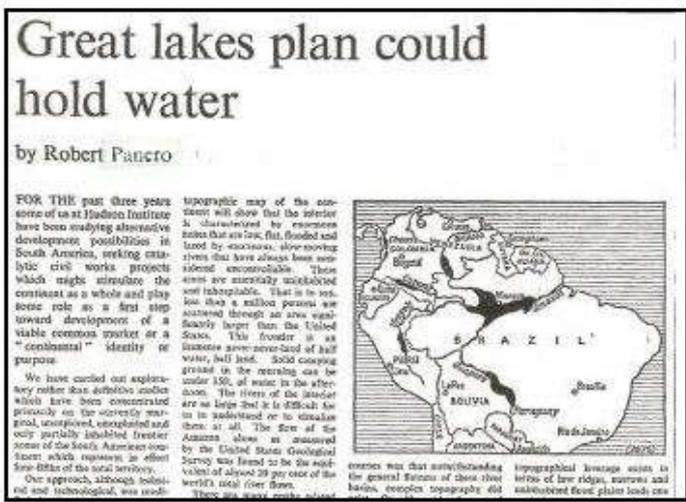
The US Department of Agriculture monitoring world prices for soya noted the rising cost of truck transport to get the soya to river ports - this rise was in part due to recently imposed Brazilian restrictions on driving hours.

For most bulk transport the Amazon river provides low cost shipping to all parts of the world including Asia. From the port of Amazon port of Santarém - that's where Michael Palin began his journey to see Henry Ford's old plantations in Fordlandia - from Santarém and from Manaus 2,300,000 metric tons of soybean were exported last year.

When talking of figures for Manaus that usually means from the grain port of Itacoatiara on the Amazon's northern bank, some 200 kms downstream from Manaus. Itacoatiara is virtually opposite the mouth of the Madeira and ideally placed to receive barge traffic from Rondonia

So the Brazilian answer to soybean transport is to use trucks to get the soybeans to silos and then by barges along the rivers or on lakes now filling behind the huge dams being built for power.

As an aside I should mention that one proposal by an American 'think tank' of the late 1960's suggested creating a series of Great Lakes in Amazonia The idea was reported widely and in 1967 *The Times*, London, carried almost a full page story and map.



The plan suggested that a series of dams not exceeding 33m high could be built across some rivers and create lakes allowing shipping between ports on the surrounding shores. With transport in place it would become easier to extract timber or minerals and the permit the production of energy. For years the idea was viewed with alarm as a nightmare

But now in 2011 rivers, dams and man made lakes are part of the planning to permit low cost

transportation of the immense amounts of Amazonian agricultural produce, minerals and timber.

On the western side of Amazonia close to Interoceanica connections a series of dams has been planned to open the route along the Rio Madeira to the Amazon - two of the dams are almost complete and will have ship-locks Both are being built on rapids previously major obstacles to navigation

The Santo Antonio dam near Porto Velho, 3,100 m long and 13.4m high will generate 3,140MW when it is fully on stream in 2016. Much of that energy will be 'exported' to southeast Brasil

The Jirau dam [*also Girau*] is about 120 kms upstream from Porto Velho and also due to be fully generating by 2016. It is 1,150m wide and 62m high

These are truly staggering projects and if the four dams are completed will change this corner of Amazonia forever. Just over 4000 kilometres of waterway will be opened for navigation and by one estimate as much as 143,000 hectares of land in western Amazonia will be opened for soybean planting - assuming of course that all the soil is suitable

To give you some idea of the scale and intention

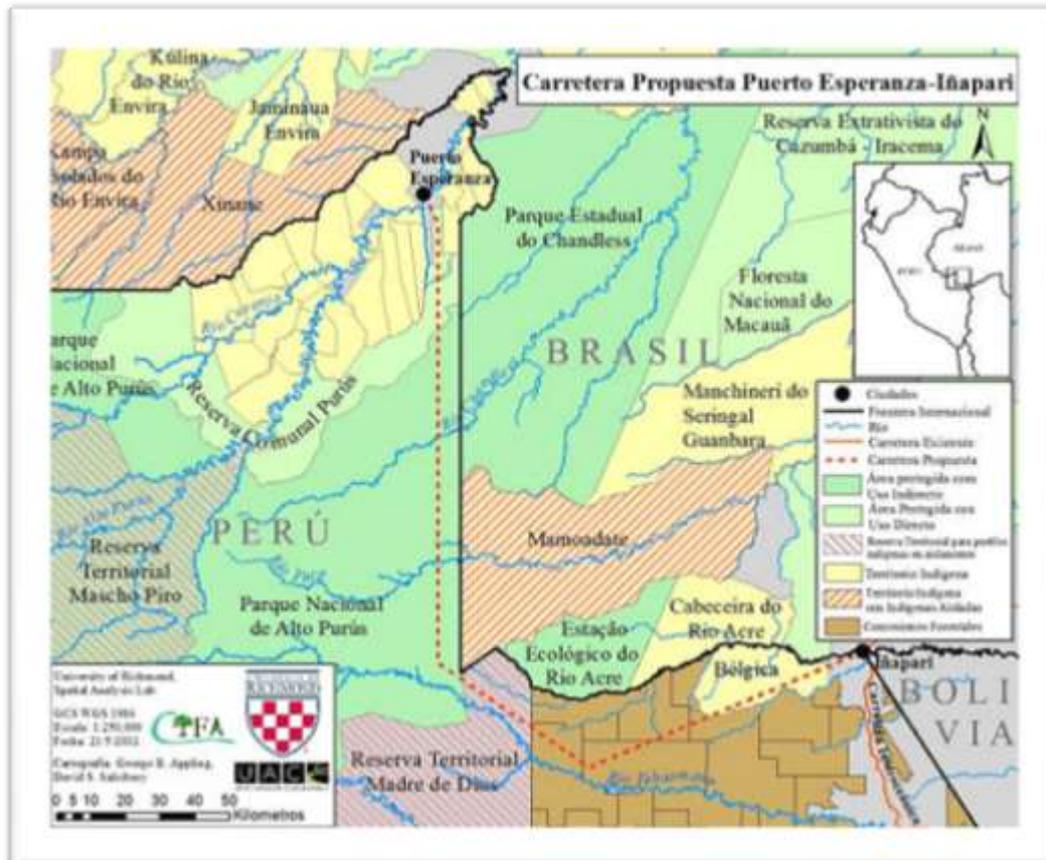
Here's one set of locks at Tucuruí on the Tocantins river over in eastern Amazonia where the system is working already. Two sets of locks give a lift of 75 metres and the constructions totally more than the height of Big Ben [London's famous clock tower] - you can even drive under the main lock. A six kilometre canal has been cut to link the two sets locks and avoid rapids.



By using barges any bulk products from Madre de Dios Region could be exported at low cost via the Amazon - much as rubber was in the 19th century. Of course the other two dams would be essential for simplifying the route - but money for products and money for infrastructure seem to go and in hand - at least in Brasil.



So finally back to the thorny topic of further road building in **Madre de Dios** and especially in the province of Purus. I will repeat John's map.



There are suggestions that a road could be built from Iñapari to Puerto Esperanza on the Purus. Not everyone is against the idea but objections include the danger to the Alto Purus National Park and contiguous reserves.

The area is largely pristine tropical forest and as John has said it is home to small

pockets of forest tribal people - perhaps numbering no more than a couple of hundred who have had no real contact with Europeans since the rubber era. A road here would

simply introduce more people and machinery.

I feel this is a good place to finish as a new road would certainly improve the life for the Peruvians in Puerto Esperanza and the existing settlers along the rivers. It would and open up the area which in any case is already gaining from the changes in Brasil across the border.

And the Peruvian Government is not entirely against the road as long as it is controlled.... so with economics on its side and the need to establish a stronger Peruvian presence in Purus the road could get a go ahead.

Looking to what may happen in this part of Amazonia is crystal ball gazing territory

At present about 18.4 pc of the Madre de Dios Region is devoted to parks and reserves --- And how the remainder of the land is used will depend on how well it is suited to crops. In the short term small scale farming and extraction of forest products will enjoy easy transport along the new highway. But any large scale agricultural production requiring major investment would look very carefully at transport costs.

The first steps will be logging and already trucks are seen every day - even back in the 1960s when we were there making TV films for BBC , timber from Quincemil was being hauled over the mountains . I can recall riding uphill on a truck carrying a pile of lumber and chatting with an American anthropologist about a forest people, the *Huachipaeri* - the timber we were sitting on was bound for Cusco.

But once the new hidrovias are completed the main export route will be via the Amazon - In high water season the Purus river offers an easy route but it is long and very meandering so it is not good year round, but soybean is harvested usually in March a high water season for the rivers.

So with more people - more roads - more regional prosperity it adds up to add up to a very good reason to rigorously protect the likes of the Manú, Tambopata, Manú and Bahuaja-Sonene reserves.

The Interoceánica road itself will almost certainly act as a conduit bring settlers from the impoverished highlands - you can see that economic in the case of Pucallpa - a road of sorts was built in 1945 and the population is now 200,000 - in Bolivia Santa Cruz de

La Sierra was a small town of about 50,000 in 1950 but with a road built in the 1950s it has grown to over 2 million - and is the largest city in Bolivia

It is with apologies to the Anglo Peruvian Society that I will finish in Brasil near Brasilia, the capital built from scratch in the *cerrado* in the late 1950's. Perhaps we should not forget that President Belaúnde also had a plan to move the Peruvian capital from Lima to the rainforest - it was named Ciudad Constitución and it never really got off the ground. But rough roads connecting the site to other parts of Peru are in place.

In 1977 I was helping the producers of a David Attenborough *Life on Earth* film and was taken to a small reserve the *Aguas Emendadas* about thirty five kms outside the city. From this particular spot streams beginning underground flow south to the Plate system and Buenos Aires or north to the Amazon and Belém.

A month ago I was there again to see how apart from in the reserve the *cerrado* had survived - the reserve is remarkably well protected by guards and surrounded by a fence. But outside the fence huge soya fields sit cheek by jowl with a wilderness still home to wildlife much as we filmed just less than forty years ago. Two towns one with 76,000 people and connected by a major highway now abut the remaining 10,500 hectare protected area



Man is truly taking over the planet. Thank you for coming out on this chill evening and goodnight