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சுற்றாடல் நீதிக்கான கேந்திர நிலையம்
Centre for Environmental Justice



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01st February 2011

Director General,
Central Environmental Authority,
"Parisara Piyasa",
No. 104, Denzil Kobbekaduwa Mawatha,
Battaramulla.

Dear Sir/Madam,

Public Comments on Uma Oya Multi Purpose Development Project

This is with reference to the EIA notice in the Ceylon Daily News of 27th December 2010, seeking public comments for the proposed Uma Oya Multi Purpose Development Project.

We are sending the following comments on the said EIA.

1. Alternatives are inadequate and not comprehensive

Under the **SECTION 1.2.2**, it states that,

"Under this initiative, an International Airport, a Harbour and an Oil Refinery have been taken up for development. These mega projects and the urban and industrial development activities that are expected to take place as a result would need considerable quantities of water in addition to the irrigation and domestic water demands of the region. This project initiative is focused on these requirements".

But when analyzed the predicted benefits of the project, increased yield of water is only 2% and cultivation of other crops in new areas is 11% of the total benefits of the project. 84% of the benefits are from energy generation. Therefore, main objectives of the project and final outcome are divisive.

Also Chapter 1.1 stated that water requirement in SEDZ is the reason for giving priority for Uma Oya Project. But that aspect has not well covered by the EIA. If energy has recognized as main benefit, this may achieve without trans-basin diversion and many other structures of the project which would result major negative environmental and

social impacts in the Uma Oya basin. In that case the analysis of the alternatives are inadequate and false.

2. The EIA's cost benefit analysis is unacceptably flawed.

An environmental cost-benefit analysis of a proposed project is essential for decision-makers to determine whether the potential benefits of a proposed project outweigh the project's environmental costs. An environmental cost-benefit analysis is even more essential for a project of this nature, where the Government of Sri Lanka is planning to borrow several hundred million dollars from a foreign government, and will be obliged to repay the loan even if the project's benefits do not outweigh the project's environment costs.

A poor decision will bind the Government of Sri Lanka, and its taxpayers and citizens, to repayment a loan for a project that is also damaging to the environment.

Unfortunately, the environmental cost-benefit analysis presented in the EIA is too deeply flawed to serve as a basis for decision-makers in Sri Lanka to make this determination.

Chapter 6 of the EIA presents a cost-benefit analysis of the proposed Uma Oya Multipurpose Development Project in which the benefits of the project are presented in the following headings and in the following amounts:

Type of Benefit	Amount (Rs/year)	Amount (USD/year)	% of total
Benefits of energy generation	20,710,488,000	\$ 186,917,762	84%
Benefits of saved carbon dioxide emissions	434,000,000	\$ 3,916,968	2%
Increases in paddy cultivation	84,780,000	\$ 765,162	0%
Increased cultivation of other crops in new areas	2,651,847,750	\$ 23,933,644	11%
Increased yield of water	377,550,000	\$ 3,407,491	2%
Increased fish production	3,600,000	\$ 32,491	0%
Increased visitation to Uda Walawe Park	664,000	\$ 5,993	0%
Increased water spread	259,580,020	\$ 2,342,780	1%
TOTAL	24,522,509,770	\$ 221,322,290	

As is readily apparent, the benefit of energy generation is alleged predominant benefit of the project, amounting to more than 84% of the project's total alleged benefits of \$221 million per year.

However, the EIA grossly overstates the value of the project's energy yield. In arriving at a value of nearly \$187 million per year, the EIA determined the "cost saved in construction and operation of the cheapest alternative facility that could provide power supply of equivalent quality and quantity to the intended beneficiaries" (Page 284).

This is an inappropriate methodology.

First, there are other ways Sri Lanka could invest several hundred million dollars to help meet energy needs, including investments in demand-side management (improved efficiency of energy consumption and transmission).

According to the Chapter 6.2.2.1, the project is expected to generate only 231 Gigawatt-hours of energy per year (EIA at page 285). It would be more appropriate for the EIA to estimate the value of this energy to Sri Lankan consumers of electricity in terms of the price they are willing to pay. Presently, the average price of electricity in the U.S. is \$0.1024 per kilowatt-hour (Kw-h).¹ This is not too different from the situation in Sri Lanka where the average retail price for electricity is roughly Rs. 7/Kw-h, and the cost of generating and delivering electricity is Rs. 14/Kw-h.²

If one multiplies the average retail price for electricity by the annual expected electricity generation of the project (231,000,000 Kw-h), it is readily apparent that the value of the project's energy yield is not \$187 million per year but only \$23.6 million per year. Using this more reasonable methodology, the total benefits of the project are not \$221 million per year, but only \$58 million per year

As stated in Chapter 1.1, "Government of Sri Lanka (GOSL) gave high priority to proposed Uma Oya Multipurpose Development (UOMD) Project in order to meet the water requirements in the SEDZ area which consist of an airport, industrial zone and a harbour etc". But those benefits are not addressed in the cost benefit analysis.

3. The EIA specifically excludes values of the environmental costs of the project.

Chapter 6.5.1 of the EIA states that "Certain costs and benefits have not been included in the analysis due to unavailability of methodologies and lack of data."

Inspection of the EIA reveals that these environmental costs of the project have not been evaluated.

Impacts on flora and fauna, geological impacts, EIA page 291; EIA pages 216, 232-233
soil erosion, noise pollution, etc, during the
construction stage

River pollution and its long term cumulative EIA page 291; EIA page 218
impacts on aquatic flora, fauna and humans

¹ http://www.eia.doe.gov/electricity/epm/table5_6_a.html

² <http://www.re-expo.net/SRI/visitors.html>

Clearing of forest areas and damages to ecosystems and functions performed by such ecosystems, including fragmentation	EIA page 291; EIA page 228
Impacts on humans forced into involuntary resettlement	EIA page 291; EIA pages 192-194
Impacts on wildlife, including endangered elephants and other rare/endemic species	EIA pages 226-232
Impacts on aquatic fauna, including anadromous and migratory fish species	EIA pages 227-229
Impacts on sites of historical, cultural and religious significance	EIA pages 198-200

By not including values for these impacts of the proposed project, the EIA does not contain a true environmental cost-benefit analysis of the proposed project.

If the costs of any of these impacts, either individually or separately, are significant, then the project could be a financial as well as an environmental tragedy. For example, if the project were to lead to the extinction of Sri Lanka's remaining elephant population, would the production of an additional 231 GW-hr of electricity offset the cost of this tragic result?

Therefore, we consider that the environmental costs of the above are very significant aspects which are totally missed in this proposed EIA and therefore developing an Environmental Impact Assessment fades away.

3. The EIA fails to develop a successful plan for the resettlement of the displaced population.

The EIA states the necessity of permanently relocating a total amount of 202 households. Moreover the agricultural lands of 197 families will be acquired for the project and the livelihood of those families will be disrupted. Although in Chapter 5.1.4 states that "Agricultural land holders who lost their lands will be entitled to receive lands in downstream area", the locations and the distance from households have not mentioned.

The EIA states:

"It is assumed that relationship and lifestyle of these families at new resettlement sites will not be as same as their present places. Most probably they will loose their kinship ties and the social safety that they have established. It is a vital

factor that the income range of all affected families is over Rs. 5,000 per month and is doubtful whether they will be able to receive such an income per month at their new settlement sites.”

The social and economic impact on the relocated population will be very serious. The EIA states:

“16.2% households (HH) are earning Rs. 5,000 to Rs.10,000 per month while 26.5% HH are earning Rs10,001 to Rs 20,000 per month. Significant feature is 57.3% households monthly income is above Rs 20,000. This income range indicates that higher percentage of affected families is maintaining better living standard. Further it was observed that most of affected people depend on commercial agriculture particularly high valued vegetables and potato cultivation. Selected relocation sites are tea cultivated lands and will not be possible to grow vegetables and potatoes due to unavailability of regular water supply and soil condition of the land. Therefore affected people will have to depend on tea cultivation which will provide them a regular income per month. However, it is doubtful whether the income they earn at present could be gained from the tea land at new sites.”

According to the Table 4.1, around 38% of affected people are farmers, specially vegetable and potatoes which cannot be continued in the proposed resettle areas and they have to shift to a totally different employment of tea. Although 1 acre of land is provided, as said in the EIA “it is doubtful” whether they would be able to adapt to the new life. Therefore we feel that the proposed Uma oya project will also scatter the communities as “development refugees” for the sake of development.

The EIA fails to specify how the resettled population will generate income. The EIA states only:

“Income generating activities at new settlement sites should be arranged, while developing tea lands. This project will not be benefited to the affected people in the area unless they receive agricultural land in downstream area. Therefore agricultural land holders should be given agricultural lands in downstream area where they can earn reasonable income from paddy and vegetable cultivation.”

But the same EIA also states:

“Those who are willing to resettle in downstream area will disrupt their children’s education.”

That means that families who receive lands in downstream areas will disrupt the continuity of their children’s education, while families who receive lands in upstream area will not have sufficient income.

Although the EIA identified relocation of people as the most significant impact, sufficient measures have not proposed or suggested to overcome it.

4. The EIA reveals serious impacts to fauna

The proposed EIA repeatedly stated the serious impacts to the biodiversity specially the fauna.

The project would cause substantial impacts to aquatic life, especially through fragmentation of habitat. The EIA states:

“Dam construction may alter aquatic ecology and river hydrology upstream and downstream of Uma Oya, affecting water quality, quantity and breeding grounds. Habitat for anadromous fish species such as *Anguilla bicolor* and other aquatic species may also degraded and/or declined.”

The fragmentation of the river is a serious problem. Fragmentation of habitat is one of the first causes of environmental degradation all over the world and one of the principal causes of species extinction worldwide.

The EIA states:

“The proposed dams tend to fragment the riverine ecosystem, isolating populations of species living up and downstream of the dam and cutting off migrations and other species movements. As a result of habitat destruction and obstruction to organism dispersal, many riverine species may have become fragmented and run the risk of future extinction. The proposed reservoirs can also cut off migratory routes across the valley and along the river. Because of the isolated populations, this ecosystem fragmentation may leads to the risks of inbreeding from a smaller genetic pool.”

The EIA, then, recognize the risk of extinction for migratory species. Among the migratory species who live in the area there are *Garra ceylonensis* and *Garra ceylonensis phillipsi*. Both endemic species that, due to the project, can run to extinction. But the impact of the fragmentation of habitats will affect all the species and also the other indigenous species of the area *Puntius bimaculatus*.

In Section 5.4.7 of Management Actions to Mitigate Impact on Aquatic Inhabitants, it states that “However, these species are available in the other undisturbed tributaries of the country. Therefore, no mitigation is recommended as the fish ladders are very expensive and therefore not practical for this project”.

5. The EIA reveals serious impacts to terrestrial fauna, especially endangered elephant

The EIA categorizes the impact of the project on fauna by stating:

“Moderate impact on the animals living associated with Victoria-Randenigala-Rantambe Sanctuary is anticipated. This is due to the diversion of Uma Oya water away from its normal path where this Sanctuary is located. Animals living there can face water scarcity problems especially elephants that are ranging downstream areas of Uma Oya. Similarly other activities that take away wildlife habitats located close proximity to any form of reserve will have an impact on species that are having larger home ranges covering outside areas.”

Especially, the EIA recognize an impact on remaining bears. Sri Lankan Sloth Bear is a subspecies of the Sloth Bear who live in Sri Lanka and who is considered Critically Endangered and its population is considered in decrease by the IUCN. However the EIA states:

“Last remaining Bear habitats close proximity to Bogahapptiya area and Slender Loris habitats are also affected.”

The EIA also recognize a strong impact on elephant. The EIA of the Uma Oya project clearly states:

“The Uma Oya development project has significant impact on elephants.”

Sri Lankan Elephant (*Elephas maximus maximus*) is the Sri Lankan subspecies of Asiatic elephant. It is considered by the IUCN an endangered species with a population in decrease. The estimated population is between 2500 and 4000 individuals. A survey conducted by the Department of Wildlife Conservation in 1994 revealed that there were about 2000 elephants in the wild, except in the North and Eastern Provinces where this survey could not be conducted. This led to the belief that the wild population was between 2500 and 3000.

The EIA states:

“Nearly more than 1500 elephants inhabit the area and majority will be affected covering Hambantota and Moneragala Districts.”

That means that nearly half of the elephant population will be affected by the project.

Chapter 5.4.4 of the report described the proposed mitigatory measures to minimize human elephant conflict such as extension of Lunugamwehera NP, Yala Block IV, and Manage Elephant Range etc. In the monitoring plan none of the measures have defined for monitoring. Recent incidents clearly reveal that relevant authorities fail to translocate the displaced elephants, therefore the mentioned mitigatory measures could not be predicted.

Mega development activities operated in southern areas such as: Mattala airport and Hambantota harbour have already created a pressure on wildlife parks. This project

will also further displace the existing wildlife and generate excess pressure on remaining resources.

6. The EIA inappropriately uses the 7Q10 method for determining the environmental flow requirement

The EIA calculates the Environmental Flow Requirement using the 7Q10 method - the seven-day, consecutive low flow with a ten year returns frequency. The 7Q10 flow was widely used in the 1970's, but already by 1981 the United States Fish and Wildlife Service explained that the:

“7Q10 flow had been misused in the past as a minimum flow for protection of the aquatic community, however it is not an acceptable instream flow method.”

In 1995 the National Biological Service of the United States Department of the Interior clearly stated that:

“A hydrological technique that is inappropriate for establishing instream flows for fish is the 7-day-10 year low flow (expressed as 7Q10). This statistic was developed to ensure that water treatment plants did not violate water quality standard during droughts.”

In 1995 Caissie and El-Jabi warned that the use of the 7Q10 flow could significantly underestimate instream flows, and harmful biological effects could arise from application of these methods, therefore the use of this index for this purpose was not recommended.

The State of Massachusetts clearly stated that:

“Although such a low stream flow value, roughly equivalent to a ten-year drought, is appropriately used in the context of limiting pollution discharges, the 7Q10 flow statistic is sometimes inappropriately claimed to represent an adequate streamflow for maintaining a healthy aquatic ecosystem, when in fact much higher streamflow levels are required.”

In fact IUCN consider the Environmental Flow Requirement as the 95% probability flow while the World Bank and the International Water Management Institute used the Tennant Method that consider the EFR as the flow over 20% and 40% of the mean annual flow.

The difference between the 7Q10 method and the others methods is substantial. For example, in the Uma Oya project the point F, that is located Outlet to Rantambe reservoir the Mean Annual Flow is 13 m³/s, the Tennant Method used by World Bank preview an EFR of 2,6 and 5,2 m³/s (depending if 20% or 40% criteria is used), the Q95 used by IUCN preview an EFR of 0,37 m³/s, the 7Q10 method preview a flow of only

0,037 m³/s; an environmental flow that is basically less than 0,3% of the annual mean flow.

If we take as EFR the 40% of the Tennant Method (the more safeguard method), according to the projection in table 4.5p the points A (downstream of Puhulpola reservoir), B (downstream of Dyraaba reservoir) and C (downstream of confluence Puhulpola-Dyraaba reservoir) they will not maintain a sufficient flow after the project implementation.

Conclusion

The above comments were made during the short time period we had to analyze this very large document and therefore it is not inclusive all the comments. Therefore, we would like to request a public hearing under the EIA regulations as this is a major project which has major social and environmental impacts and invite us to make oral comments which will include further comments on the other areas of the EIA.

However above comments and the findings shows that the recommendations given in the EIA is not based on the true cost and benefits. It shows that energy benefits have overstated the environmental cost has underestimated. The recommendations also not based on the adequately considered alternatives and the environmental impacts.

Therefore, we request the Central Environmental Authority to request necessary clarifications from the EIA team and the project proponents and provide another opportunity for us to comment on the corrected version of the EIA.

Sincerely Yours,
Centre for Environmental Justice/ Friends of the Earth Sri Lanka

Chamali Liyanage, Environmental Officer

Hemantha Withanage, Executive Director