The FINANCIAL -- Georgia should build more small-sized hydropower facilities instead of the Khudoni Hydro Power Plant, Dr Atif Ansar, Associate Fellow of the Saïd Business School, University of Oxford, believes.

Developing countries that have experienced macroeconomic and currency instability should not start implementing such mega-projects as the Khudoni Hydro Power Plant, Dr Atif Ansar, an Associate Fellow of the Said Business School, University of Oxford, believes. The kind of major hydroelectric dam projects favoured by China, Brazil, Ethiopia, Indonesia and Pakistan is likely to burden their economies with debt rather than drive them forward, concludes new research from the Saïd Business School.

As the research found, in most cases large dams are economically not viable and few, if any, will realize their planned benefits. Also, severe cost and schedule overruns mean they can be seriously damaging to the economies that pin so much hope on them. Their findings are based on the largest ever study of large hydroelectric dams (245 in 65 countries) which looked at costs, construction time, and benefits of all large dams built since 1934.

"Georgia should consider building relatively small-sized hydropower facility projects," Dr Atif Ansar, an Associate Fellow of the Saïd Business School, University of Oxford, believes.
Khudoni Hydropower Plant is a projected power plant on the Inguri River, in Samegrelo-Zemo Svaneti. The construction of the Khudoni Hydropower Plant started in 1979 and was stopped after protests over environmental concerns in June 1989. In 2005-2006, the Georgian Government started to seek investments to continue the Khudoni project. According to the Georgian Government-commissioned and World Bank-supported study, the construction of the Namakhvani, Paravani and Khudoni hydro power plants are the most attractive scenarios for the development of Georgia's energy sector. Environmentalists remain skeptical about the Khudoni HPP project. The construction will cause flooding of the highland village of Khaishi, the local population believes.

The World Bank considers the impact of the dam's construction on the microclimate to be of a "very localized nature".

"The construction costs alone of large dams are on average more than 90% higher than their budgets at the time of approval. But the final costs - including debt servicing, inflation or cost overruns - are likely to be much higher still. The magnitude of cost overruns has not declined over time, with dams being built today as likely to go wrong as at any time during the 70 years for which data exists. The overall cost of construction of large dams is so high that economically it is not viable particularly in developing countries. On average, the overall cost of large dams ends up being over 90 percent more than the original estimate. For example, if a dam was estimated to cost a million dollars but the time frame for the project is expanded, the costs are nearly doubled. The cost is therefore much higher and the benefits are much lower," Ansar added.

Q. If large dams are not economically viable and do not realize their planned benefits, then why are the politicians and international organizations still focused on mega-projects and why do they support their implementation?

A. It is unclear why the politicians like to build large dams. There are two reasons in my opinion. One - they are optimistic about the idea, which we call being a "fool", and two - they are strategically misrepresenting the extra costs, which we call being a "liar". People optimistically think that large dams will bring them a lot of benefits and they look at such examples as the Hooer Dam in the USA, which is an often-heard argument in favour of building new large dams. Instead of relying on the outcome of just one project, decision-makers should consider evidence for the entire population. In the case of large dams, the probability of failure dominates. If leaders of emerging economies are truly interested in the welfare of their citizens, they are better off laying grand visions of mega-dams aside.

Q. The research you conducted with your colleagues considered several emerging markets. What was the economic damage inflicted on those markets by the building of...
A brisk building boom of hydropower mega-dams is underway from China to Brazil. Whether the benefits of these new dams will outweigh the costs remains unresolved despite contentious debates. Budgets are systematically biased below actual costs of large hydropower dams—excluding inflation, substantial debt servicing, environmental and social costs.

Brazil’s Itaipu Dam was built in the 1970s, where a 240% cost overrun impaired the nation’s public finances for three decades. Despite producing much-needed electricity, Itaipu is unlikely to ever pay back the costs incurred to build it. The Three Gorges Dam in China is an “environmental bane” that will cost over USD 26.45 billion over the next 10 years in environmental “mitigation efforts”. Despite their outsized financial and environmental costs, the purported benefits of large hydropower dams prove uncertain. For example, the World Commission of Dams reported that for large hydropower dams “average hydropower generation in the first year of commercial operation is 80% of the targeted value”—a trend of which the recently completed Bakun hydropower project in Borneo is an alarming example.

The scale of contemporary large dams is so vast that even for a large economy such as China’s the negative economic ramifications “could likely hinder the economic viability of the country as a whole” if the risks inherent to these projects are not well managed.

Q. As well as building more small-sized dams, what are your additional suggestions to the governments not only in Georgia but other emerging markets too?

A. Before making any energy investment, we propose to create transparency on risk profiles of various energy alternatives, from not only the perspective of financial cost and benefit but also environmental and social impact. Improve resource allocation through outside-in view to estimate costs, benefits, time, and broader impacts such as greenhouse gas emissions incurred in building a project and emission created or averted once a project becomes operational.

A comprehensive global dataset that can create such transparency on risk profiles of energy alternatives does not yet exist. We have sought to bridge this precise gap by providing impartial evidence on large hydropower dam projects. As a venue for further research we hope valid and reliable data on the actual cost, schedules, benefits, and impacts of other production technologies will become available to enable comparative analysis with novel implications for theory and practice.