Attracting foreign investment

Why Bangladesh can't seem to do it while Costa Rica did?

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writes from Washington DC

FOR the last few days, there has been a number of news stories and editorials on the slow down in foreign investment in Bangladesh. This once again raises the question: why, despite many efforts, is Bangladesh still unable to attract foreign investment in a big way?

Successive governments in Bangladesh have emphasized the need to attract foreign investment into the country. This makes sense. Anyone who is aware of the scarcity of investible resources in the country would understand why attracting foreign investment is important. But it is not a matter of finance alone. Foreign investment can be an important vehicle for the transfer of technology and the dissemination of good organizational and management practices.

But talking about the need to attract foreign investment is one thing; being able to induce investment is another. How well have we done on this front? In particular, how effective have been our investment promotion efforts? The recent statistics and observations on foreign investment flows do not suggest a very positive answer. This is indeed a subject that one needs to think about more seriously. As we try to devise more effective means of attracting foreign investment, we will do well to study what others have done and heed their lessons. In that spirit, it is worthwhile to look at a very successful investment promotion effort by a small country in Central America, Costa Rica.

Like many other developing countries, Costa Rica had put priority on attracting foreign investment and had set up an investment promotion agency, CINDE, to pursue this. But while many other countries have had limited, or zero, success, in such ventures, Costa Rica has had remarkable achievements. The crowning glory came in 1996 when Intel, one of the world's largest semi-conductor companies, chose Costa Rica as the location of their next big plant. Costa Rica was chosen over many other better-placed competitors. How this small central American country got this big catch is worth exploring, specially for countries keen to attract high technology firms. Fortunately, that story has been documented by a Harvard business professor, Deborah Spa, and published as a working paper by the Foreign Investment Advisory Services--a joint World Bank-IFC facility. I distill here the main lessons.

Firstly, it is important for a country to "get on the map". There are usually two broad stages in the decision making process of a foreign investor. In the first stage, the investor identifies a long list of countries where it may invest. In the second stage, it successively narrows down its list through a rigorous process of investigation and due diligence, and finally selects its investment destination. The first challenge for a country is thus to get on the map. If you can't do this, there is not much use bothering about the second phase. All the right things that Costa Rica did in the second phase to convince Intel would not have had much relevance if they had not got on Intel's radar screen in the first place.

So what do you need to get onto the map? Readers will remember the famous camera ad a few years ago: "Image is everything". Well, perhaps not everything but quite a lot, when it comes to attracting foreign investment. In addition to a stable democracy, liberal economy and a transparent legal system, Costa Rica had the image of having a government that wanted to facilitate, not harass, foreign investors. And that image was not created automatically -- the Costa Ricans worked hard at that. Glossy brochures helped. But more important was objective publicity about the country. Stories of good economic performance and successful reforms help create a good image of a country. By the same token, adverse reports, such as that of corruption and political instability can have a negative impact. But, perhaps, more important than all of these are the stories of those who have traveled the path before; i.e., the experience of previous investors or would-be investors. There is nothing that throws a country off the map more than horror stories recounted by investors with fingers burnt in previous attempts. Successfully attracting the first few big companies is particularly critical to a country's longer-term success. Such investors not only bring their capital and technology but also help market the country to other investors.

It is important to have a good idea of the characteristics and potential of one's own country, and choose an investment promotion strategy that fits well with what one has to offer. Costa Rica knew well where its strengths lay. It had a stable political system and a fairly liberalized economy. It had an educated work force and a developing electronics sector. These were not enough to attract Intel--requirements match the country's potential. Failure to choose targets that meet one's potential has been the death-knell of many an investment promotion effort.

The Costa Ricans had clearly done their homework before their first meeting with Intel. But it did not end there. The diligent homework continued after the first meeting. While Intel performed its own due diligence, the Costa Rican Investment Promotion Agency, CINDE, did a lot of research on both the semiconductor industry as well as on Intel. In particular, they learned how Intel normally goes about selecting sites for their plants. All this helped the Costa Ricans when and the Costa Rican government was fully aware of that. But they knew that these at least satisfied the basic requirements of Intel. By the time they had the first meeting with the Intel management, the government knew what Intel required and was confident that Costa Rica could satisfy these requirements. This approach contrasts with one where a country is attracted by a big name company and approaches it without the faintest idea of what the company is looking for and whether its they sat across the table negotiating with Intel. They knew exactly what the company was looking for and how they could be satisfied. This can be contrasted with the uninformed and naive approach we often see in our own investment promotion efforts.

There is another important lesson from Costa Rica's investment promotion efforts. The Costa Ricans did not grant any special favors to Intel. However, they carried out significant improvements in their infrastructure, e.g., in airports, schools, and substantially improved the working of their free trade zones. These were done partly to satisfy Intel's needs but the changes were beneficial for everyone. Instead of focusing on firm-specific concessions, Costa Rica went for broader changes, which did benefit the one company they particularly wanted to attract, but also had more general impact. Costa Rica's approach should give pause to those who argue for special concessions to individual foreign investors.

In brief, the lessons are clear. Investment promotion is an art and a science. Above all, it is hard work. Governments need to do their homework, they need to listen carefully to potential investors and find out what they want and what they hate. But more than anything, there needs to be follow-up. There is nothing worse than wooing potential investors and then keeping them waiting in the dark. Unfortunately, this is something we have often done in Bangladesh.

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IT for survival

S.H.M. FAKHRUDDIN

IN South Asia over 515 million people live in absolute poverty, 260 million lack access to even rudimentary health facilities, 337 million are without safe drinking water, 830 million have no access to basic sanitation, 395 million are unable to read and write, 600 million people have no proper shelter. And we are talking about Information Technology! Yes, for the survival of 130 million people of Bangladesh we must think of IT, dream of IT, live with IT... We are far behind in comparison to the advanced countries in IT field. The situation can't go like this. We must jump in this field for the greater interest and survival of the country.

The speed and extent of development depends on the availability of materials, technology and financial resources. In earlier stages of development, land and minerals constituted the principle resources. Physical labour was the only value for human being. But today, information and knowledge have become increasingly important for development and progress. 'Industrial age' has now converted into 'information era'. Knowledge is not lost when it is freely given away. It is readily transportable at rapid speed and at a very low cost. Knowledge can contribute to development as follows:

1. As an essential input for education, scientific research and industrial technology;
2. As a productive resource;
3. As a catalyst for economic development and social change; and
4. As a basis for civilization and cultural values that promote social integrity and harmony, which is the essential foundation for development.

We know in a country like Bangladesh we have lots of knowledge gap. And it is not possible to take benefit of IT revolution due to this gap. If we use IT as a tool in all our sectors this gap can be bridged. You know the words 'knowledge', 'information', and 'data' are used interchangeably. Firstly it deals from experience to knowledge, raw data is distilled into information and ideas and next these ideas and facts are organised as information. Information Technology can provide better transparency, efficiency, effectiveness and accountability in decision-making. Good corporate governance utilize the IT tools which would help and support development of the poor at a faster rate as they are also made a part of the whole development process. Also the professional institutions promote the advancement of their profession and ensure that their members follow strict code of ethics in professional dealings and offer the highest quality of service to their clients.

We know the price of computers in Bangladesh is the lowest in the world. However, even with this low price very few people in the country can afford to buy a computer for home use. The present number of computers is around 600,000 (i.e. 4.5 per 1000 population) that is also one of the lowest in the world. If we look at the Internet users, the picture is not very encouraging. There are around 55 ISP's in Bangladesh (BTTB is the lone ISP in the public sector, all others being operated by private sector), which provide services to around 70,000 account holders (approx.300,000 users). The only means of connection to global information superhighway is now through satellites. The decision of the government to allow the private companies to directly negotiate with vendors for installing VSATs and reduction in the licence fees to be paid to the government has led to a reduction in the Internet user charges. But even this rate (typically 4-5 kbps at user level) makes it very expensive for ordinary users.

History will not forgive us if we fail to look into their interests since we are not in a position to provide them suitable job opportunities both in the public and private sectors. The problem with us is that we are poor but our mentality is even poorer. Many of us don't like work for our country and those who do are not recognised. We should remember that no other than ourselves will come to our rescue. So if we are not careful from now on the future is not ours. It is good enough that our Government identified the IT as the thrust sector. So our approach should be pragmatic, practical and output oriented and less ornamental.

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Some aspects of gas resource geology of Bangladesh

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THE following points on the petroleum geology, more specifically gas geology of Bangladesh is based on the poster presentation made by the author at the 17th world Petroleum Congress held at Rio de Janeiro, Brazil from 1st to 5th September 2002. About 3000 delegates from 90 countries including geoscientists, petroleum economists, oil company executives, government ministers and officials, and academicians participated in the congress, one of the largest professional gathering of its kind. The above poster presentation on gas exploration and gas resource of Bangladesh consisted more than 10 diagrammatic presentation of the petroleum geological maps and cross sections of Bangladesh along with tables and charts. The points stated below are accompanied by some explanations for better understanding of the subject for non geologist readers.

The paper discusses, for Bangladesh, the status of four basic requirement for a gas field to form, i.e (A) gas source, (B) gas reservoir, (C) trap and (D) timely gas migration. When these four factors coexist satisfactorily in the underground, you are likely to find gas field. Simply stated, the gas potential of an area may be known from the degree of potentials of these factors as given by the formula: Gas potential = Ax BxCxD.

Gas reserve: Bangladesh has discovered 22 gas fields, all in the eastern part of the country. The total Gas Initially In Place (GIIP) is estimated at about 25 TCF with initial recoverable reserve of 16.5 Tcf. After consuming 4.6 Tcf till date the remaining gas reserve stands at 12 Tcf. The average gas exploration success ratio is 3:1. However the success ratio of different areas of the country as well as their gas potential vary very widely. It is only the eastern part of the country which has been proved gas rich. No gas field has so far been discovered in the western part, nor the gas potential of the western part considered bright.

Gas quality: Typically the gas found in Bangladesh is very rich in methane and is compositionally dry. This means that the gas in general have little higher hydrocarbon (like ethane, propane, butane etc) and thus do not produce much liquid known as condensate when extracted to the surface. Exceptions are found only in three fields, Jalalabad, Beanibazar and Kailashtila where significant liquid condensate is produced with gas. Because most of the gas in Bangladesh is dry, this is not suitable for gas based petrochemical industry. The gas is typically very pure. It contains virtually no sulfur and has insignificant carbon dioxide and nitrogen or any other impurities. It means that the gas can be used without any treatment.

Gas source: What is the source of the gas and where is it generated? Petroleum explorers usually try to locate the source of gas that may occur deep in the underground. Locating the source, i.e the place where gas is generated, facilitates the gas explorer to better target the reservoirs into which the gas ultimately migrates and resides.

Nobody has yet pointedly identified the source of the natural gas in Bangladesh. But geological studies and drilling data have suggested that the gas is generated about 6 to 8 kilometer below the surface in shale rock layers known as Barail rock unit. The source rock has 1 to 2 % total organic carbon (TOC) which is derived from terrestrial plant materials.

So what does it mean in practical terms? The source rock quality depends on the organic richness of the rock layers and the type of organic matter, because organic matter is the primary material from which gas and oil are generated by underground heat. The organic content of the Bangladesh source rock is generally lower than the world class source rocks in other petroleum provinces like Nigeria, Gulf coast and Middle East. Furthermore since the organic matter of Bangladesh source rock is derived from terrestrial plants (humic) and not from marine or ocean life, it is only good for gas generation and not suitable for oil. This is the reason why Bangladesh does not have any significant oil reserve inspite of having many gas discoveries, unlike many petroleum rich provinces in the world where oil and gas coexists together.

A further point which puzzles geoscientists in Bangladesh is that a major part of rock sequence (Tipam and Surma rock units) below the surface level (upto about 4 kilometer), has too little organic matter thus rendering these layers not suitable for generating any significant gas.

In many petroleum rich areas of the world, the oil and gas originates at much shallower depth, but why is the depth of origin of gas in Bangladesh so deep i.e. 6 to 8 kilometer below surface level? Would not it have been better if we had our gas generated at much shallower depth? The reason is low temperature gradient. In Bangladesh, the temperature gradient or the rate of increase of temperature with depth below surface is generally below world average. So it take great depth to attain temperature level required for gas generation from raw organic matter.

So how would we rate our gas source? Well, it is not a world class source rock. It is certainly suitable only for gas generation, but not for oil. A lower temperature gradient means that heat required for gas generation is attained at very deep level (6 to 8 km below surface}, compared to many other petroleum rich provinces of the world where petroleum is generated at much shallower depths.

Gas reservoir: The gas reservoirs are those porous and permeable rock layers into which the gas migrates from the source rocks and accumulates. It is this rock layer from which the gas is extracted by drilling pipe. Generally sandstone and limestone rock layers form most of the oil and gas reservoirs in the world. In Bangladesh, all gas reservoirs are sandstone layers. How would we rate our reservoir rock? Certainly highly. The porous and permeable sandstone rock layers are abundant in the onshore underground at depth levels from less than 1 km to more than 5 km. These sand layers alternates with interbedded shale layers which help to bar the gas from escaping up from sand.

So, do we have a problem with our reservoir rock? Well, generally no, in the onshore, and furthermore, some of the onshore gas field like Habiganj indeed has world class reservoir quality with excellent porosity and permeability. However, there is a point to make for the offshore. As the recent drillings have suggested, the reservoir quality of rock layer becomes poorer specially as one moves from north to south in the offshore Bay of Bengal. One of the major worry of gas explorers in the southern Bay of Bengal is that the area lacks good reservoir rocks. Here the sand layers tend to be clayey or dirty thus do not have enough porosity and permeability to hold gas within it.

The trap: Trap is a structure or framework in the rock layer that hold back gas or oil from escaping or migrating. In other words it traps gas or oil within reservoir rock. Trap is the primary concern of exploration people. In other words, this is the first element a gas or oil explorer will look for and depending on its identification he will proceed to drill. The seismic survey most of the gas explorers carry out prior to drilling, is to locate trap in the underground.

Traps are generally of two types, the simpler structural trap and complex stratigraphic trap. All the gas fields so far discovered in Bangladesh are found in structural traps i.e in folded structures known as anticline. These are upward undulation in the rock layer and are rather easy to identify by seismic survey. Bangladesh geology is characterized by the presence of many simple anticlinal fold traps in the eastern part of the country. On the contrary these kinds of fold structures are absent in the western part. The above fact has influenced the gas geology to a great extent in Bangladesh.

The reason why there is no gas field in western Bangladesh is that the area lacks fold structures i.e fold traps. For the same reason the gas prospect of the western Bangladesh is rated as poor. This is also the case with West Bengal in India. Because of the lack of fold structures, more than 50 wells drilled in West Bengal have turned dry.

The other kind of trap, the stratigraphic trap is rather elusive and subtle, difficult to find and risky as well as expensive to explore. Some geologist suggest common occurrence of channel sand and lenticular sand body type stratigraphic trap in Bangladesh, but till date these are rarely targeted and without success.

So what kind of problem do we have with our traps? The main problem is the rather small area, perhaps only a third (central-eastern part) of the country, where prospective fold traps are present. Since this area has been the target of oil and gas explorer for more than last 30 years, there are not very many structural traps left to explore. Because of lack of structure traps in the western half of the country, the area also has failed to attract foreign oil company to engage for gas exploration there.

Gas migration: Suppose we have a gas source, a gas reservoir and a trap but still there is no gas field. The reason may lie with problem of gas migration, the last requirement for the formation of a gas field. So gas must have a conduit or passage through which it can migrate from source rock to the reservoir rock.

It disappointed many geologists when the Shell Oil company failed to discover gas in the exploratory well drilled at Sandwip island in south Bangladesh. There are gas fields to the south, north and east Sandwip area, gas must have been generated underneath. Sandwip is a good fold structure trap, but there was perhaps no fault or conduit for the gas to migrate from source rock to Sandwip reservoir and hence no gas accumulation.

In most cases fault within the earth crust form conduit for gas migration. However should the fault line continue up to the surface, gas would escape to the atmosphere and lost, a case well demonstrated in the hills of Sitakund in Chittagong, where gas seepages at a number of places encouraged Hindu devotees to build temple on the perennial fire of burning gas at the surface.

Conclusion -- the uniqueness: Bangladesh is located on the second largest river delta system of the world. Many large delta systems of the world like Niger delta of Nigeria, Mahakam delta of Indonesia, Gulf Coast of USA are petroleum rich provinces because river deltas generally have some inherent properties suitable for generation and accumulation of oil and gas. These properties have certainly contributed to the gas rich areas of Bangladesh.

But what are the uniqueness of Bangladesh delta basin, if any? Do these influence the oil gas geology of the country? Bangladesh basin is certainly unique in that it has a very large river system, very huge sediment load carried by the rivers, comparatively high rate of sedimentation and subsidence and of course a rather low rate of increase of temperature with burial depth. The above scenario has been continuing for some millions of years during which time gas was generated and accumulated in the underground. Certainly these have generally influenced the gas geology of the area. High rate of sedimentation has hindered formation of abundant gas source rock, delta sedimentations have enough sand to generate abundant reservoir rocks and so on.

However, one of the most puzzling feature of the Bangladesh delta basin is the absence of growth fault system. Growth faults are common in other large delta basins (Niger delta, Gulf Coast USA etc) where these have contributed to a large extend in oil and gas accumulation. Growth faults are formed as large sediment load are deposited rapidly in the sea at the same time as the delta grows, hence the name growth fault. But why these are not well developed in Bangladesh instead of the area being one of the largest delta in the world? So far geoscientist have been questioning without really coming up with a satisfactory answer.

A second point of uniqueness in the gas geology of Bangladesh is perhaps the very young formation of the gas fields. The fold structures in Bangladesh have formed only 2 to 3 million years ago (a million year is a small unit of time in geological language) and gas accumulation started after that, perhaps not enough time to fill the structures. This is evidenced from the low fill of the gas in some of the structures that resulted in very small size gas field. This means that gas is yet to fill the structure, it is still accumulating in the structure and will eventually fill it up perhaps in a few thousand years time.

A group of people mainly the IOC geologists and executives tend to advocate a huge gas reserve scenario for Bangladesh. Often theoretical conjectures rather than practical data are the basis of such notion. A second group, mainly national geoscientists, on the other hand holds a more conservative idea regarding gas reserve. From the discussion above, it would appear overoptimistic to suppose a huge (the term is relative) gas reserve in a small country like Bangladesh with only a smaller part where gas prospect is bright. Far more geological studies and drilling data would be necessary to pointedly offer conclusion on the subject. But certainly we would need more than theoretical conjectures to offer reasonable comment of the gas reserve on the country.

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