Sluggish Response to Salt Industry

by Md Sadeque

SALT known Chemically as Sodium Chloride is an article of common food necessary to provide the body requirement of sodium and chloride. In Bangladesh a large portion of the population lives below poverty line. Adequate supply of salt at a reasonably low price is a must for the minimum health and nutrition. Salt has many other industrial uses as shown below and forms one of the basic raw materials for caustic chlorine, soda ash, soap and detergents, meat canning, fish curing, leather tanning, petroleum exploration, regenerant ion-exchange resins for soft water, etc.

The establishment of a sound salt production industry can provide stimulus to the growth of a wide range of industrial products even in developing country like Bangladesh in addition to the essential basic food for the poor and rich a like.

No dependable data on the minimum dietary requirement of salt for human consumption in Bangladesh are available. The total requirement is said to be 6 lac to 8.5 lac ton as published recently in the daily newspapers. The requirement of industrial salts as estimated on the existing industries is around 90,000 MT. For industrial use salt is required to be purified more. For example, for Caustic Chlorine production, the Calcium, Magnesium and Sulphate level to be maintained 100 PPM (Max), 1 PPM (Max) and 5 Gram/Litre respectively. Otherwise, the expensive graphite anode is corroded severely and product quality becomes poor.

Present State of the Industry

Bangladesh has a long tradition of salt manufacture from sea water and the country is dependent only on sea source.

The tiny size of salt fields in Bangladesh is mainly due to the ownership pattern. Most of the lands belong to the landlords. The landlords prefer to lease the lands in small plots since the cultivators can't provide adequate capital to organise production in a bigger scale. The availability of the land in small plots also create keen competition among the prospective producers to bid land and allow the landlords to get a higher rent. Solar salt is produced here only in dry season. On an average this starts from December and continues upto May. The dry season starts from October but the lands are not available. Preparation of the fields also takes about one month for building the low dykes, leveling, digging channels rebuilding the field layout, drying and levelling the fields, etc. Most of the producers have no land. The landlords hold these as long as possible to secure best price. The farmers are also very poor and can't invest capital. The reconstruction activities involve considerable coordination with other producers and hence the production is delayed.

A combination of solar and forced evaporation process — very crude in respect of present day methods known as lixivation — is being practised in the costal areas of Noakhali, Barisal, Khulna and Chittagong from time immemorial. The fuel used is the fire woods which is very dear now-a-days. The lixivation process is largely replaced by solar evaporation in the district of Chittagong and Cox's Bazar.

There is also long tradition of imports of salts into Bangladesh. During Pakistan time large quantities of salts used to be imported mainly from the then West Pakistan. After liberation salt is being imported mainly from India. The government of Bangladesh has taken up some steps to attain self-sufficiency in salt. BSCIC has been entrusted for this. They have two demonstration plots — one 80 acres at Kutubdia and another of 14 acres at Chowpaldandi of Chokoria Thana of Cox's Bazar.

Present Production Trend

There has been steady expansion of the salt producing area but the unit output is very low. The highest output was 28 MT/acre in 1988-89. The entire area engaged in solar evaporation is in the district of Cox's Bazar and Chittagong mainly. The areas are Kutubdia, Chokoria, Moheshkhali, Teknaf and Boalkhali of Chittagong District.

Despite the long coast line of about 300 miles, the area suitable for salt production is restricted to Chittagong and Cox's Bazar coast line as this area is relatively free from dilution effect of river water.

From November onward the densities of sea water starts rising from 2^0Be to 3.5^0Be. Salt production in Bangladesh like crop production is dependent on weather. The effect of seasonal rain could be disastrous as in the year 1990 when only 2 lac tons of salt was produced.

Present Scale of Production

In the year 1990-91, about 40,000 acres were brought under salt cultivation. The manufacture is presently undertaken on a very tiny scale, which can hardly permit efficient and economic production. One of the main reasons is that the producers don't have their own land. The second cause is the shortage of capital. Most of the producers have less than 2 acres of land. It is reported that the cost of production is reduced to 50 per cent when the plot is increased from 1 acres to 5 acres.

Existing process of solar salt production

The methods followed in Bangladesh are very very primitive and labour intensive. At the time of spring tide, the sea water is allowed to enter into a distribution canal twice in a month. This canal is used as a reservoir by the individual producers. The reservoirs are not big enough and the dykes are very low and irregular. From the canal brine is bucketed and only BSCIC at Kutubdia and Chowpaldandi use pumps into the first concentration pond. Generally 4(four) concentration ponds ar used. The 1st one is the biggest and the next ponds are gradually reduced in size. The brine of about 2.5-3^0Be is allowed to the 1st concentration pond. After 24 hours-48 hours when the brine density comes to around 5^0Be this is transferred to the 2nd conc. pond where it is kept for about 24 hours. When the brine density is 7^0 after about 24 hrs, this is transferred to the 3rd conc. pond where the density comes to 9^0Be. After about 24 hrs the soln. is transferred to the crystallizer pond which is divided into four sections. After every transfer each pond is levelled manually by wooden rollers.

Sometimes the correct concentration is not attained in the last concentration pond and salt is not crystalized. The soln. is again recycled manually even in BSCIC Project. This is because no measuring device is used. The producers depend absolutely on experience. Only in BSCIC projects simple hydrometer is used, which is a very inexpensive and dependable tool for measuring concentration.

In manufacturing solar salt, precision control of brine strength at different stages is essential to separate out the other salts of calciums and Magnesium.

The depth of the concentrated brine in crystallizer ponds is about 2.5 — 3Cm and the brine is allowed to evaporate almost completely where calcium and magnesium salts are also co-crystallized along with sodium chloride. BSCIC plot at Chowpaldandi uses simple hydrometer to measure and the bitterns are recycled to the 1st pond manually to recover the salt. The bittern contains undesirable salts and should be rejected or used for recovery of other salts. The salt crystals are scraped and heaped on the crystallizer ponds.

This contains lots of clays and sand. BSCIC collects the precipited crystals and also washes the bottom portion of the small heaps by using bamboo baskets. This washing does not remove the clays completely. They have also a storage facility. The other manufacturers don't wash the salt. They have no storage facilities also. Usually, they store the salts near their fields. Untimely rain plays havoc.

Workers preparing salt. — *Star photo*

Marketing

The salts produced in the fields is not fit for human consumption since it contains lots of silts and other salts of calcium and magnesium. Except BSCIC, all manufacturers sell it to the crushing units directly or through their agents. Since there is no facility of storage and protection from rain and no good road communication the producers want to dispose of the salts as early as possible and are being exploited by the middlemen and 'dadan' givers. The price the growers gets is very very low and exploitative.

The crushing units wash and crush the salts to get the salt clarified. The units are also primitive. The brine drain is used again and again. After washing, the salt acquires a dull white colour but co-crystallized calcium and magnesium salts still remain largely because the bitterns are not drained out. The crushing units are the main gainers. The price of salt at the crushing units is almost double that in the field.

It is very much unfortunate that Bangladesh is to import salt almost every year. This year 4(four) lac tons has been imported. The foreign exchange involvement is around Tk 72 Crore. The FOB value of salt in bulk is 15 to 16 US$ all over the world. The retail price of our salt is Tk 7/- per Kg — the most expensive salt in the world. But people have become used to this situation. The retail price of common salt, beautifully packaged, all over India, is Rs 3/- per Kg.

Apart from land, finance appears to be the biggest bottleneck in the organization of production. Bank financing is not also regular and timely. The initial capital requirements for payment of advance rent, wages to labour, rebuilding of layout are high. Most of the producers resort to borrowing money from the money lenders or buyers at exorbitant high rate of interest (Dadan System).

Improvement of the Existing System

Evaporation is the main activity in solar salt production. Approximately 38 M T of water is to be evaporated to produce one M T of salt. The evaporation is influenced by factors like surface area temperature, rainfall, wind velocity and direction, humidity in air, size and shape of the water surface and density of brine. The suitable climate of salt production is short and hardly 5 months in a year. As a matter of thumb rule, the more the surface area, the more efficient is the evaporation of water.

The sea-water can be allowed to enter into a reservoir by pumping instead of twice in a month during spring tides. The existing reservoirs are not big enough and the dikes are very low. As a result, the individual producer collects the water from this reservoir manually usually by bucketing by labourers. BSCIC only uses pumps. The reservoir area can be made larger by using the government Khas land, and the dikes raised, so that the individual cultivator can get the solution by gravity without spending any energy.

At different concentrations, certain impurities in sea water are separated. At 7.4^0Be most of the ferrous ions separate out as ferric oxide and settles. On further concentration at 10^0Be, the carbonate starts precipitating. At 12^0Be Calcium Sulphate starts precipitating and at 16.4^0Be half of the initially present Calcium Sulphate is removed. A large reservoir is thus, advantageous in getting most of the undesirable impurities separated before the entry to concentration ponds. This will increase the productivity and reduce the cost considerably.

Recommendations

(a) The size of the reservoir should be enlarged and the dikes of the common reservoir should be raised so that the producers can receive the partially concentrated saline water by gravity instead of manual bucketing. (b) Sheds should be made in the salt producing area so that producers can stock their produced salt temporarily and preserve during rain. Salt is highly soluble in water. (c) The approach roads to the salt producing area should be improved. As for example in Chowpaldandi Area the road to the Moheshkali Channel was a brick-solid road. This is in very bad condition and only light vehicles can move. The producers or the buyers carry the salt on their heads. (d) Modern scientific inputs for producing the salt are to be provided. For example use of inexpensive hydrometers for determining concentration of brine and techniques for improving evaporation should be taught. (e) Permanent dikes are to be made instead of the existing practice of making the dikes by clay every year. More than one month is required to make the salt fields ready every year. The dikes are made by engaging manual labour and are easily damaged. (f) The farmers are to be trained to preserve the concentrated soln at the end of the season by use of plastic sheets. This soln can be used next year for quick production of salt. (g) The crushing units should be modernized. The existing ones are very much primitive and cause huge loss of salts. The impurities can't be separated in the existing process which makes it unsuitable for human consumption and industrial use. (h) The farmers should be encouraged to produce in bigger area instead of one/two acres holding. The output increases proportionately with the area. Adequate financing arrangement with easy terms should be made to encourage the cultivators. (i) The bitterns should be discarded or used for recovering salt of magnesium, Calcium and Potassium. This is widely practised in many parts of the world. (j) For industrial salts purification techniques have to be taught so that calcium, magnesium and sulphate levels can be maintained within limit. (k) At least 20,000/-MT/year salt should be allowed to be imported by the Caustic-Chlorine manufacturers of the country at concessional rate of customs duties until quality salts are produced in the country. (l) The government of Bangladesh should come forward to solve the existing problems of salt production. This will enable saving precious foreign exchange and ensure steady supply of salt.

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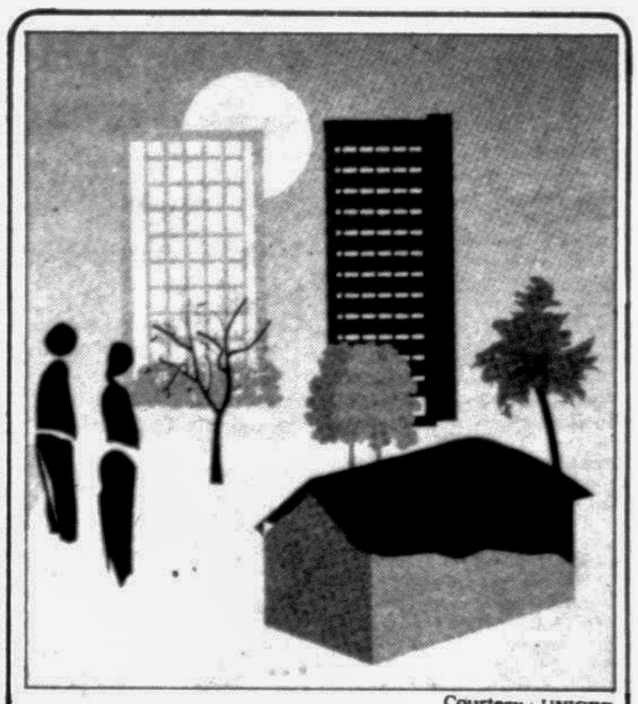

Courtesy : UNICEF

The Development Set

EXCUSE me, friends, I must catch my jet
I'm off to join the Development Set
My bags are packed, and I've had all my shots
I have traveller's cheques, and pills for the trots

The Development Set is bright and noble
Our thoughts are deep and our vision global
Although we move with the better classes
Our thoughts are always with the masses

In Sheraton Hotels in scattered nations
We damn the multinational corporations
Injustice seems easy to protest
In such seething hotbeds of social rest

We discuss malnutrition over our steaks
And plan hunger talks during coffee breaks
Whether Asian floods or African drought
We face each issue with an open mouth

We bring in consultants whose circumlocution
Raises difficulties for every solution
Thus guaranteeing continued eating
by showing the need for another meeting

Consultants, it's said, believe it no crime
To borrow your watch to tell the tie
Their expenses, however, are justified
When one thinks of the jobs they might later provide

The language of the Development Set
Stretches the English alphabet
We use swell words like 'epigenetic'
'micro', 'macro' and "logarithmetic"

It pleasures us to be so esoteric---
It's so intellectually atmospheric!
Although establishments may be unmoved,
Our vocabularies are much improved.

When the talk gets deep, and you're feeling dumb
You can keep your shame to a minimum
To show that you, too, are intelligent
Smugly ask, "But is it really development?"

Or say, "That's fine in practice, but don't you see,
It doesn't work out in theory!"
A few may find this incomprehensible,
But most will admire you as deep and sensible

Development Set homes are extremely chic,
Full of carvings, curios, and draped with batik
Eye level photographs subtly assure
That your host is at home with the great and the poor

Enough of these verses---on with the Mission!
Our task is as broad as the human condition!
Just pray, "God may the biblical promise come true
The poor ye shall always have with you."

—*Anonymous*

Eviction of Slums

by Feroz M Hassan

ONLY when the High Court intervened Madhubala, a widow who lives by breaking bricks in the Kalyanpur *basti*, together with her two orphan children were spared from forced eviction by police force. Kalyanpur *basti* which is situated next to the boundary wall of Housing and Building Research Institute of the Government for over a decade, offered shelter to more than 1500 families like Madhumala's. This is their only shelter and if they are evicted they will be thrown out into uncertainty without a roof over their head.

In the capital city Dhaka, according to a survey, there are about 2156 slums (*Basti*), where residents were burnt in a fire in 1991. This is not the only *basti* so threatened. In past 2 years more than 10 such *bastis* were cleared off and people living there were forcibly evicted. Notices for eviction have been served on half a dozen more. And thousands of families are now threatened with homelessness.

Slums and Squatter Settlements

In the approved National Housing Policy in article 5.7 it is stated:

"Massive rural to urban migration, rapid urbanization and consequent growth of slums and squatters in the city of Dhaka and Chittagong have been caused by enormous increase in the absolute number of the poor, deterioration of economic conditions in the rural areas, frequent occurrence of divesting natural calamities and other factors, the government recognizes the difficult situation in which the poor live in the slums/settlements and struggle to make a living and also contribute to the growth of the urban economy".

After consultations with experts, policy makers an public representatives government formulated and approved a National Housing Policy on December 13, 1993, in which it is clearly stated "to avoid forcible relocation or displacement of slum dwellers...". Moreover, it says to expand water supply, provide sanitation and basic services through community involvement and participation of the voluntary agencies.

She has no place to go

Although right to live in the existing *bastis* by the people who inhabit them for a long time is guaranteed in government policy the forced eviction by different government agencies in the guise of serious public interest challenges the government's existing policies and certainly also go against the fundamental human rights guaranteed by international covenants.

Moreover it also places the NGO activities to gear up poverty alleviation in the urban slums into serious deadlock. All the resources put into such poverty alleviation work is wasted. Interestingly, these NGO programmes are approved by the NGO Affairs Bureau — a cell in the Prime-Ministers office an how a few government departments (demolishing squad) can ignore the approval of the Prime-Ministers office is a mystery.

Nobody is advocating that slums/squatters can not be evicted even in public interest but a minimum human approach to the eviction problem can be expected from the enlightened decision-makers. For example, the inhabitants of the to be evicted from slums should be adequately notified. NGOs working in the slum in question can also be notified and consulted as to how less painfully the relocation can be done and how the NGOs can contribute to the relocation process. More important, there can be a dialogue with the inhabitants regarding the proposed eviction and relocation.

The writer is president MSS

The Ethical Dilemma in Development

by Julius Nyerere

QUESTIONS about the ethics of global economic relationships, though nationally and internationally relevant, are rarely asked except by those regarded as maverick Northern idealists or as greedy people from the South.

Is it ethical, for example, that the world be organised in such a way that wealthy and developed nations automatically — by virtue of the workings of the international economic order — continue to grow richer, and more powerful, while the poorest and least developed stay poor or get poorer?

Basic questions about political ideologies usually come down to how you ask, and how you answer, questions about the production and the distribution of national wealth. Ethics are relevant, but so are economic judgments.

In the past, official aid to Africa has been used to prop up some of the most corrupt and brutal regimes on this continent.

Resources from the tax payers in developed countries have been distributed covertly to destabilise or overthrow popular governments which were trying to guarantee their people basic food supplies, health, and education, even if their methods involved some hardship for the rich and the vocal.

A number of the major Western countries have also been the major supporters of corrupt regimes in Africa and other parts of the South.

Moreover, many government leaders brought to power in coups supported by the North have become disgustingly rich while in office and received additional help from the North to put down revolts by their own people.

How was UNITA financed in Angola? Indeed, how is it still being financed? How did

RENAMO manage to survive the fall of Ian Smith in Rhodesia and continue, until recently, to wreak havoc in Mozambique even after apartheid was officially renounced? Will the leopard change his spots now that the Cold War is over ?

While the people of each sovereign nation must be allowed to organise their own affairs in their own way, I can see no reason why honest and charitable people in developed countries, or their governments, should be expected to support corrupt governments or organisations in poor countries.

No one could legitimately resent being asked to account for money properly.

Non-governmental organisation (NGO) assistance to Africa comes from voluntary contributions in work and money from millions of ordinary people hoping to help those less fortunate than themselves.

A lot of it is directed to vital relief work after disaster has struck, but some helps people to help themselves through grassroots development activity. Both of these forms of assistance are valuable and appreciated.

But voluntary contributions cannot do much to help the improvement of national or even local infrastructure.

They can provide roofing for a school built by the villagers but they cannot train or pay the teachers for it. Infrastructure development is vital; it is also very expensive.

NGOs are not a substitute for official aid and do nothing to reduce the urgency of reforming the international economic order. Moreover, in developing countries cursed with corrupt or evil governments, voluntary organisations may be able to do no more than person to person relief work.

Corruption is a curse on any country; it is a plague on the poor, an enemy of justice, and anathema to all religious beliefs. It has to be fought. And the first responsibility for doing that rests with the citizens of the country concerned.

Ethical questions are not easy.

If we are dissatisfied with the organisation with which we are associated, the question that arises is whether we can reduce its faults from working within or whether the honest action is resignation.

Yet we cannot resign from the world. Nor can we realistically expect to transform it during our lifetimes.

But each of us individually has a responsibility to make the maximum contribution to building a better world for mankind to live and work in.

While an ethical approach to difficult questions of economic policy and social priorities is not by itself sufficient to ensure that a 'a just Africa' is built, just societies will not, and cannot, be built without ethnics on the part of our citizens, and particularly on the part of our leaders.

Individually and collectively, in economic matters as well as personal relations, we forget ethics at our peril.

Julius Nyerere is now the chairman of the South Commission.