Discussors on Papers in Session : S-2

(The papers were published in Vol. 46 No. 4)

1. **Sri A. K. Roy,** *Geological Survey of India* :

Exploration projects for tubewell, currently under operation by Geological Survey of India, have shown successful results. Within a year or so, it may be possible to clear a major part of Sunderban area for development by irrigation tubewells. Similar investigations in Durgapur industrial complex have proved that large scale extraction is possible. This water can also be utilised for irrigation purpose. Haldia area has adequate ground water not only to sustain industries that are proposed to be set up but also can be developed for irrigation purposes.

2. **Sri S. Subba Rao,** Associate Professor of Sanitary Engineering, All India Institute of Hygiene and Public Health :

Use of rigid P. V. C pipes for tubewells is alright, when we use a casing. But in case of small dia tubewell, where we cannot use a casing, sinking and extraction of pipe, will present a problem. The manufacturer should ffnd a suitable method for extraction and also for a strong joining between master pipe and a metallie strainer.

3. **Sri Ashutosh Bhattacharjee,** President, Krishak Samaj,

Emphasis has been laid on minor irrigation, mostly tube well irrigation and the Ministry of Agriculture has declared that about 1650 crores will be spent for ground water irrigation schemes by the end of the 4th Plan. The expenditure for minor irrigation which began in the Third Plan cost about Rs. 579 crores. Rs. 2300 crores will be spent for minor irrigation against the proposed outlay of Rs. 2397 crores for major and medium irrigation of which Rs. 2100 crores have already been spent. The achievements are said to be the creation of irrigation potential for 12½ million additional acres and the target was covering up 17¼ million acres during the period against irrigation potential for 8½ million acres by major irrigation. Before the plan, 55 million acres were under irrigation which has now been raised to 70 million acres of which canal irrigation has been raised to 30 million acres from 27 million acres of 64-65. But the ultimate objective of irrigation is to raise the productivity of the soil i. e. the yeild of the crops we grow, so that the standard of living of the masses depending on agriculture may be raised.

Our Scientists realised that neither high yielding seeds nor application of chemical fertilisers ean raise the yield of the crops if there is no adequate and timely supply of water which can only be ensured by canal water of big Irrigational schemes. That is why Mr. C. Subramaniam unequivocally declared that if 30 million acres with assured supply of irrigation water be covered with high yielding seeds the then production of food grains of 89 million Tons will be raised to 120 million Tons although he knew that about 70 million acres were under irrigation water but depended upon canal irrigation and not tubewell water the supply of which had already proved to be a failure in improving either the yeild or quality of any of the crops we grow. The official index no of productivity so far published conclusively

prove that the yield of any of our crops excepting wheat has not improved since 1964-65 when I.A.D.P. was introduced and minor irrigation was encouraged. The rise in the yeild of wheat was no more then 20% on all India basis and 55% in the Punjab and Haryana where the farmers themselves claim that the rise was more due to sufficient supply of extended canal water than anything else. It is also to be noted that up to 64-65 the rise in the productivity of any of our crops was due to extension of big irrigation Projects. Even in the case of wheat, it was much more than the subsequent period since when extention of tubewell irrigation and I.A.D.P. had taken place. The official index no. of productivity of wheat which rose to 138 by 1964-65 was no more the 158 in 69-70. The claim of rise in the production of wheat from 12 million ton of 64-65 to 23 million ton in 70-71 (the figures for which has not yet been published) is officially stated to be more due to favourable monsoon than I.A.D.P. or tubewell irrigation though green revolution is claimed. Our yeild of wheat is no more than 12 quintal per hectare while Japan or Egypt has 24 quintals per hectare and U. K. the highest yeilder has about 42 quintals per hectare from the very begining from canal water. Tokyo city is said to be sinking due to big tubewells sunk over there.

In the case of paddy, it is no more than 16 quintal per hectare while Japan has about 57 and U.A.R. about 50 quintals per hectare both of which is served by canal water besides conservation of soil which India has ignored. Tamil Nadu where 95% of rice acreage is irrigated mostly from canal water has all along 50% higher yeild than other areas in India. Even tank water gives better result to the Japanese farmers at Saharanpur than tubewell irrigation at Chakdah in W. Bengal. Similarly wheat yield of the Punjab which is only 18.5 quintal i.e. 50% higher than Indian average is also accounted for, by the canal irrigation. In the case of cotton, India's yield is no more than 1.2 quintal per hectare while U.A.R. has 6.4 quintal per hectare which is also much superior in quality. Punjab which can grow better cotton though not as good as in Egypt, raised the yield to about 3.2 quintal per hectare and Tamil Nadu about 2 quintal per hectare of the same quality as both depended on canal water of the River Valley Prejects. Indian jute yield is no more then $2\frac{1}{2}$ bales per acre which Pakistan has all along $3\frac{1}{4}$ bales of superior quality. The retting of jute on which the texture and strength of the fibre depends is best done by flood water and not tubewell water which is also quite unfit for the purpose. Fish which we are in dearth of cannot grow in tubewell water. Above all, flood which has now become chronic in India, causing heavy destruction of crops and lives of cattle and human beings requires to be harnessed for which big river valley projects only are suittable. Our unwise railway policy of high embankments and short span bridges have shiffed the river courses. The silt they carry, said to be the best fertiliser of the life time instead of enriching the soil, is being deposited on the bed which has been raised causing heavy floods from time to time. So canal water is much more efficient for raising the productivity. Tubewell water is no solution for the same. Tubewells cannot be perennial source of water and once out of order, cannot be repaired so soon. Subsoil water is exhausted from the level it has been sunk very soon and requires costly resinking. There is also fear of drying up of surface water of the tanks as a result of drawing water from the shallow tubewells. Moreover want of steel will make digging of tubewells almost impossible and all soil is not for tubewell sinking. Prime necessity of the

time is revival of dead lying river towns which will give work to millions while tubewell can serve no such purpose.

Lastly, the charges are very high. One inch per acre at the end will require at least 4 inches at the source from which the metre charges will be 40/-. Tubewell may give temporay benefit to a few who can afford to pay for its purchase and bear the costs which 90% of our farmers cannot do on account of their poverty on due to small holdings. Even when it gives two or more crops it may increase the gross income of the few but not suitable to farmers' economy. Double cropping involves almost double the costs if the commensurate rise in the yield does not occur as is invariably the case. So it cannot raise the net income. Moreover it creates further disparity in rural wealth which cannot be said to do social justice.

SESSION : S—3 : ROAD & HIGHWAY CONSTRUCTION

Welcome Address

By

K. C. Sivaramakrishnan

It is a very great pleasure to welcome you in the 3rd Technical Session of the Second All India Conference on Engineering Materials and Equipment. I presume that the moto in asking me to make a formal welcome is not with a view to ensure my participation in the seminar because I am a lay man not belonging to any engineering faculty. I am simply a client.

I was going through various papers contained in the Souvenir last night and I got the impression that most of the things that I wanted to raise have been covered. Nevertheless, I like to place before you for your consideration certain feelings I have had in my mind, being a member of your distinguised fraternity.

During the past one year, we have been trying very hard to start Calcutta Development Programme. When we started this programme general reaction was that we had to face negative criticism. It was a doubt whether we could take up work and money be available. Even if money is available whether various implementing agencies would be able to complete the works due to lack of finance and delivery of goods. Even if the implementing organisations were in a position to deliver goods, they woul not be allowed to do so due to political interference. The fourth one was that what is being done is enough and imaginative ?

Every professional community in democratic society is performing its function. Professional communiiy is also expected to deliver goods. For speedy action, engineering community should demand that money and materials be made available readily.