

pound of nitrogen. If all this fertilizer were produced from natural gas in West Pakistan, the yearly gas consumption would be 30 billion cubic feet. At this rate, estimated recoverable reserves from the Sui field alone would last for nearly two centuries.

Because of the large reserves of natural gas, it should be economically practical to produce all required nitrogen fertilizer in West Pakistan. By the end of the Second Five Year Plan in 1964-65, nitrogen fertilizer plant capacity will be about 75,000 tons a year. Capital costs of the plants needed to produce another 550,000 tons should be around \$200 million (Rs 960 million). These costs are included in the capital costs listed above. To minimize fertilizer transportation costs, the new plants should probably be built near the gas pipeline running through the agricultural development areas. In the long run, it should prove cheaper to transmit natural gas by pipe line than fertilizer by rail or truck.

The lowest transportation costs for phosphate fertilizer, on the other hand, would be achieved by producing triple superphosphate from imported raw materials at Karachi, and shipping the fertilizer up country. About 160,000 tons of P_2O_5 will ultimately be needed at an annual cost of around \$30 million (Rs 140 million).

The Water Budget

After completion of the Indus Basin Settlement works, an average of 136 million acre feet of river water will be available to West Pakistan. Provided that additional surface storage can be developed economically, we estimate that an average of 92 million acre feet per year can be diverted into irrigation canals—about 18 million acre feet above the diversions during the 1950's. Surface storage is essential for this increase in diversion because of the highly seasonal character of the rivers. Around 60 million acre feet of the river flow occurs during only two months, July and August. An average of 48 million acre feet from the total canal diversions would go to the Former Punjab and Former Bahawalpur, and 44 million acre feet to Former Sind; of the remaining river water, 18 million acre feet would be lost by evaporation and seepage from the rivers and from the link canals and other Indus settlement works; 26 million acre feet would flow into the Arabian Sea. Part of the river and link canal losses could be recovered by pumping. A considerable fraction (estimated at 14 million acre feet) of the canal diversions in the Former Punjab and Former Bahawalpur will seep into the underground aquifer; practically all of this (plus an additional 6 million acre feet of recharge from rivers, link