

ESTIMATES COMMITTEE
(1968-69)

(FOURTH LOK SABHA)

SEVENTY-FIFTH REPORT

MINISTRY OF IRRIGATION AND POWER

GANDAK PROJECT



LOK SABHA SECRETARIAT
NEW DELHI

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ESTIMATES COMMITTEE
(1968-69)

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(10)

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INTRODUCTION

I, the Chairman, Estimates Committee, having been authorised by the Committee to submit the report on their behalf, present this Seventy-fifth Report on the Ministry of Irrigation and Power—Gandak Project.

2. The Committee took evidence of the representatives of the Ministry of Irrigation and Power and the Gandak Project authorities on the 17th & 18th July, 1968. The Committee wish to express their thanks to the Secretary and Joint Secretary, Ministry of Irrigation and Power, Chairman and Members, Central Water and Power Commission, Secretary, River Valley Projects Department, Government of Bihar, Chief Engineer, Gandak Project, Bihar, Joint Secretary, Irrigation Department, Govt. of U.P. and Chief Engineer, Gandak Project, U.P., Chairman, National Projects Construction Corporation, and other officers of the Ministry of Irrigation and Power for placing before them the material and information they wanted in connection with the examination of the estimates.

3. They also wish to express their thanks to Shri P. R. Guha, Retired Chief Engineer, Bihar for furnishing Memorandum to the Committee.

4. The report was considered and adopted by the Committee on the 15th March, 1969.

5. A statement showing the analysis of recommendations contained in the Report is also appended to the Report (Appendix VI).

NEW DELHI;
March 24, 1969.

Chaitra 3, 1891 (Saka).

P. VENKATASUBBAIAH,
Chairman,
Estimates Committee.

CHAPTER I

INTRODUCTORY

A. Historical Background

The Gandak River System, bounded by the Dhaulagiri peak on the west and the Manna and Rasuagarhi peaks on the east has a catchment area of 14,612 square miles in Central Nepal, of which about one-sixth is above the Himalayan snow-line. This snowfed perennial river has a maximum discharge of about 10 thousand cusecs in hot weather, and a maximum of about 7 lakhs cusecs during the rains. Known as the 'Sapt Gandaki' in Nepal and 'Narayani' or 'Gandak' in India, the river passing through the hills and thick forests, debouches into the plains at a place called Tribeni, just near the Indo-Nepal border in the district of Champaran. Tribeni (which in Hindi means confluence of three rivers) derives its name from the fact that two other tributaries namely Panchnad and Sonaha join the Gandak there, the other major tributaries of this river in hilly regions being the Kali Gandak and Buri Gandak, the Trisuli and the Rapti. From Tribeni, the course of the river, upon its confluence with the Ganga opposite Patna, is 173 miles, out of which 11½ miles of the right bank touch Nepal. Near the 80th mile, the river flows out entirely through the territory of Bihar forming the boundary line between some of the districts like Saran, Champaran and Muzaffarpur and finally it drains into the Ganga near Sonapur.

1.2. The Gandak valley, with an average of 1,020 persons per square mile, is one of the most densely populated regions of the country. It is also one of the most fertile agricultural tracts in North Bihar and Nepal and produces almost every crop grown in the plains of India. The chief crops of the valley are paddy, sugarcane, maize, wheat, barley, arhar, jute, tobacco, chilli, potato and oilseeds. Though the agriculture is fairly good, agriculture of the Gandak valley has suffered in the past on account of dependence upon the monsoon. Rains generally fail when they are needed most for sowing and transplantation of paddy or at the time of maturity of crops.

1.3. The question of construction of gravity canals for providing irrigation facilities to agricultural land in Deoria and Gorakhpur districts of U.P. and Saran, Champaran and Muzaffarpur districts of Bihar had/engaged the attention of the Government of

India and the two States of U.P. and Bihar almost a century ago. The first Project Report was prepared in Bihar in the year 1871-72, which was dropped due to some engineering difficulties anticipated in the scheme. Another proposal was framed during 1874 for taking off a canal from Gandak river at Tribeni Ghat without construction of any diversion works in the river. The scheme was sanctioned after the great famine of 1896-97 and completed in 1910. The canal so constructed came to be known as Tribeni canal and has been functioning since then.

1.4. The U.P. Government thought of similar inundation canal for the western side with a head-regulator a couple of yards above Valmikinagar (Bhaisalotan) in the district of Bhairwa in Nepal. The proposal was ultimately given up because of difficulties in regard to foundations etc. An inundation canal known as the Narayani canal system, starting from a point 11½ miles downstream of Valmikinagar (Bhaisalotan) where the river enters the U.P. territory was, however, taken up and got completed after Independence. The canal system irrigates an area of about 1½ lakh acres in Uttar Pradesh.

1.5. After the Second World War, the importance of having increased agricultural production came to be realised fully and Dr. Rajendra Prasad, the then Minister Incharge, Food and Agriculture, Government of India, requested the Government of Bihar in 1947 to investigate the possibilities of taking out the canals from the River Gandak, so as to be able to provide irrigation to large tracts of land in Saran, Champaran and Muzzaffarpur districts of Bihar and Deoria and Gorakhpur districts of Uttar Pradesh.

1.6. The investigation for preparation of the Project Report was taken up in the same year (1947) and the first draft was prepared in 1951. The Barrage and other headworks as well as some canals were to be located in Nepal and U.P. A preliminary project report was prepared and submitted by the Bihar Government during 1954 amounting to Rs. 3,194 lacs. Meanwhile the failure of late rains during four consecutive years 1950—53 creating drought conditions in Deoria and Gorakhpur districts made the problem more urgent.

1.7. As a result of the Preliminary Project Report submitted by Bihar in 1954, a Committee was set up by the Government of India under the Chairmanship of Dr. A. N. Khosla of the Central Water and Power Commission, New Delhi for negotiating terms of participation in the project of the two states of Bihar and U.P. and for getting an integrated scheme prepared for full development of the

irrigation and power potential of the Gandak River. As a result of several meetings between Engineers of U.P., Bihar and Central Water and Power Commission, New Delhi, negotiations with the Nepal Government for permission to execute part of Gandak project in Nepal were started and a preliminary report was consequently prepared by U.P. during August, 1959 for the portion of Gandak canal lying within U.P. and Nepal, which was completed in details in the year 1961 after detailed investigation and sanctioned by the Government of U.P. in February, 1962.

1.8. In the meanwhile an agreement on the project was reached with His Majesty's Government of Nepal on the 4th December, 1959. Clearance to the project was given by the Planning Commission in 1962.

B. Delay in Starting the Work on the Project

1.9. The Gandak Project was envisaged as early as 1947 but the Project was cleared by the Government only in 1962. When asked during official evidence why it took the Government 15 years to clear the project, the representative of the Ministry of Irrigation and Power stated before the Committee "The preliminary project report for this project was prepared in 1948. At that time, with the tremendous zeal and enterprise of the late Prime Minister and under the wise guidance of Dr. Khosla, the Chairman of the Water and Power Commission, many projects were examined all over the country and this was one of them. Simultaneously we were examining the Kosi Project too. It has a peculiar history, because it was known as the river of sorrow, bringing sorrow and misery to a large number of people. That was also a very large project. After the Kosi Project was prepared, having regard to the limitations of resources in the context of the First Plan, it was felt that higher priority may be given to Kosi Project. Accordingly, further work of investigation and preparation of estimates was suspended until 1953-54. After 1954, it was again taken up and preliminary project report was prepared by Bihar. Dr. Khosla and after him, the present Minister Dr. K. L. Rao, was the Chairman of the Technical Committee and prepared a very detailed project report which was finalised in about 1957-58."

1.10. When asked if it is not a fact that due to this delay in taking up the project, the cost has gone up considerably, the representative of the Ministry of Irrigation and Power has stated "All the projects could not be taken up simultaneously for want of resources. It is true that if the execution of the project had been

undertaken earlier, the cost would have been less because there has been increase in cost of materials, wages and so on. But much as we would have liked, we could not go ahead with them for want of resources."

1.11. The Project was administratively approved on the 12th March, 1962 but in the initial stages the project was starved for funds and much progress could not be achieved. It was only in the year 1965 after the visit of the then Union Minister of Finance and the Deputy Chairman of the Planning Commission that the importance and usefulness of the Project came to be fully realised and an accelerated programme of work was taken up.

C. Components of the Project

1.12. The Gandak Project consists of the following units of work:

(a) A barrage across the river Gandak at Bhaisalotan (now renamed as Valmikinagar), about 2,500 ft. below the existing Tribeni canal head regulator. The barrage has a total length of 2,425 feet about half of which will be in the Indian territory and the other half in Nepal. There is no likelihood of submergence of any agricultural lands in Nepal on account of the barrage.

(b) The main Western Canal: This canal is designed to command 14.08 lakh acres gross in the district of Saran and 8.31 lakh acres in U.P. A separate canal will also take off above the Western under-sluice to irrigate about 40,500 acres of land in the Bhairwa district of Western Nepal. The length of the main canal is 120 miles out of which 11 miles will be in Nepal, 66 miles in the districts of Gorakhpur and Deoria in U.P. and the rest in the Saran district of Bihar. The Nepal Western canal, wholly for the benefit of Nepal, will be 10 miles long.

(c) The Main Eastern Canal to command an area of 18.41 lakh acres in the districts of Champaran, Muzaffarpur and Darbhanga and 1.03 lakh acres in the Parsa, Bara and Rautahat districts of Nepal. The Don Branch canal, which is a branch canal of the Main Eastern Canal will be extended upto the 60th mile, by another 50 miles and this section would be known as the Nepal Eastern Canal and would provide irrigation to the aforesaid area in Nepal. The existing Tribeni canal will also form a branch of the Main Eastern Canal, which will be about 155 miles long and would be known as the Tirhut canal.

(d) Power House: A hydro-electric power house with an installed capacity of 15,000 k.w. would be located at the 10th mile of

the Main Western Canal in Nepal. This power house will be handed over to His Majesty's Government of Nepal when the connected load from it in Nepal has developed to the firm potential of 10,000 k.w. at 60 per cent load factor.

1.13. In addition to the above components, the following extensions have been sanctioned:

(a) Dhanaha Branch Canal: A portion of the Dhanaha P.S. of Champaran district having an area of 60,000 acres has been rendered flood free by construction of an embankment along the river Gandak on its right bank. This has since been included in the command of the Western Canal system.

(b) Ghorasahan Branch Canal: An area of about 1.67 lakh acres lying between the command of Nepal Eastern canal and that of the Tribeni canal in the district of Champaran will be brought under irrigation through a branch canal named Ghorasahan Branch canal.

D. Objectives and Benefits of the Project

1.14. The Gandak Project is one of the five biggest irrigation projects in the country. It is intended to irrigate about 3.5 million acres and it is as large as other large projects in the country, such as Bhakra Nangal Project which is to irrigate 3.5 million acres, Rajasthan canal Project to irrigate 2.5 million acres, Kosi to irrigate 2.5 million acres and Nagarjunasagar to irrigate 2.2 million acres. The following benefits are likely to accrue from the project:

(i) *Benefits to Bihar*

All told about 28.45 lakh acres of land in Bihar will be irrigated annually from the Gandak canals as detailed below:—

District	Irrigable land in lakh acres
Saran	11.35
Champaran	7.58
Mazaffarpur	7.30
Darbhanga	2.22
	28.45

1.15. The total additional yield as a result of irrigation provided, will be about 28.45 lakh tons (costing about Rs. 38.55 crores) on the assumption that with irrigation and improved agricultural practices, the additional yield per acre will easily be one ton an acre. Of this, about half is expected to be in the shape of food crops and the rest cash crops. In other words, the present deficit of about 13 lakh tons of foodgrains in a normal year will easily be wiped off with the completion of this project alone. The construction of works have since provided fresh avenues of employment to the local people and may facilitate growth of new industries in due course of time.

(ii) *Benefits to Uttar Pradesh*

1.16. The project envisages construction of 1241.5 miles of irrigation channels and re-modelling of 106 miles of existing channels of Naraini branch system which is anticipated to provide irrigation facilities to 7,11,750 acres of cultivable area in Gorakhpur and Deoria districts of Uttar Pradesh in the Doabs of River Rohin, Pyas, Rapti, Ghagra and Great Gandak. The area proposed to be irrigated for rice, sugarcane and Rabi is 4,38,000 acres, 1,64,250 acres and 1,09,500 acres respectively. The gross commanded area in these two districts is 13,32,000 acres and the culturable commanded area is 10,95,000 acres.

(iii) *Benefits to Nepal*

1.17. An area of 1,43,900 acres will be irrigated in Nepal which is estimated to yield annually agriculture produce valued at Rs. 9 million. The Government of India have agreed to construct at their own cost the two Nepal canals, the branch canals and distributaries down to 20 cusec capacity for irrigation in Nepal. The Government of Nepal would be responsible for the construction of minors and channels below 20 cusec capacity.

1.18. The Power Project in Nepal is expected to quicken the pace of industrial growth of this region of Nepal. In construction stage and thereafter, there will be large opportunities for employment of skilled and unskilled local nationals.

1.19. Moreover, the area will be opened up by new lines of communication which will help in better marketing of agricultural produce and in the growth of industries and diversification of the economy of the area. The road bridge over barrage will provide an all weather communication between Eastern and Western Nepal. Provision has been made for railway track to be laid on the barrage if required at a future date.

1.20. It has been stated by the Ministry that the Gandak Project is one of the cheapest irrigation projects in India. Even though the revised cost of the project has risen to about 149.83 crores as against the original cost of Rs. 52.03 crores, the cost per acre comes to Rs. 404. When compared to the cost per acre of some of the major irrigation works in the country, the cost compared favourably with these irrigation projects.

1.21. The Committee note that while the Preliminary Report of the Gandak Project was prepared as early as in 1951, the administrative sanction to the Project was given only in 1962 and even after that for two or three years work on the Project was not started in right earnest. This delay has not only deprived the people of the command area of large benefits but has also resulted in manifold increase in the cost of the project.

1.22. The Committee appreciate the difficulties of Government in simultaneous execution of two river valley projects in the same State, viz. Kosi and Gandak and providing the needed resources in the initial stages.

CHAPTER II

ESTIMATED COST AND ADMINISTRATIVE SET-UP

A. Preliminary Estimates and Revised Estimates

2.1. The total cost of the Gandak Project including the cost of the works in Uttar Pradesh and Nepal in 1958 was originally estimated at Rs. 52.03 crores. The share of Bihar was fixed at Rs. 40.47 crores against which the Planning Commission's sanction was Rs. 36.56 crores. The cost of Gandak Project (U.P. Portion) was estimated at Rs. 11.56 crores. The estimates for the entire project were however, revised in 1965 when the cost rose to about Rs. 141.71 crores (Bihar Portion Rs. 94.91 crores and U.P. portion Rs. 46.79 crores). The above estimates have undergone further revision and according to the latest figures, the revised cost of the Project is as follows:—

	Rs. crores
Bihar portion	103.04
Bihar share for the works in U. P.	14.44
U. P. Portion	32.35
	<hr/>
	149.83

2.2. When asked about the reasons for the increase in the estimated cost of the Project, the Committee have been informed that the reasons for increase in the Gandak Project estimate (Bihar Portion) can be classified broadly under the following categories:

1. Increase in scope of work not previously incorporated in the estimate;
2. Increase in cost of land, labour and materials with the rise in the cost of living index which has almost doubled.
3. Modifications in designs according to the latest design practices and to suit the site conditions;
4. Increase in detailed estimated quantities as the 1965 estimate was based on comparatively more detailed investigations. Latest designs and accurate statistics were adopted after the Project had already made much headway, while

the estimate of 1958 was based on preliminary investigations of the project; and

5. Inadequate provision for the distribution system in the 1958 estimate, the provision under this head has since been doubled.

2.3. The increased scope of work is responsible for raising the project estimate by Rs. 1687.56 lakhs. Under this category, the following items are included:

- (i) Construction of watercourses upto 2 cusecs instead of 5 cusecs as provided for in the original estimates. This accounts for an increase of Rs. 893.97 lakhs.
- (ii) Construction of Ghorasahan Branch Canal which accounts for Rs. 372.45 lakhs.
- (iii) Construction of Dhanaha Branch canal accounts for Rs. 44.81 lakhs.
- (iv) Construction of Main Western Canal in Nepal was to be done by U.P. It was subsequently transferred to Bihar. The original provision for this work in U.P. estimates was Rs. 194 lakhs which has now gone upto Rs. 376.33 lakhs. This amount has now been included in the estimate of Bihar.

2.4. The following increases have taken place in the cost of land, labour and materials:—

1. Labour charges have increased from Rs. 1.50 to about Rs. 2.25 per head per day—an increase of 50 per cent.
2. Cement—Increased from Rs. 5.28 per cft. to Rs. 6.78 per cft.—an increase of about 28 per cent.
3. Bricks—from Rs. 39 per thousand to Rs. 62 per thousand, an increase of 60 per cent.
4. Steel—From Rs. 39.5 per cwt. to Rs. 45.00 per cwt—an increase of about 14 per cent.
5. Land—50 per cent increase on the rates in the old estimates.

2.5. Another factor responsible for increase in the estimate is the increase in quantity based on realistic estimates. The following figures are relevant:—

- (i) Concrete in the barrage has increased from 54 lakh cft. to 72 lakh cft.

- (ii) Reinforcement in barrage has increased from 4,250 tons to 12,800 tons i.e. an increase of Rs. 1.36 crores.
- (iii) Increased quantity by way of excavation and dewatering costing about Rs. 1 crore more.
- (iv) Use of granite blocks and other such items, at a much higher cost.
- (v) Increased quantity of earthwork in excavation in canals.

Moreover, the provision for the distribution system had to be doubled, since provisional figures were taken on the basis of experience on other projects, but actual experience was otherwise.

2.6. As regards the increase in the cost of the U.P. portion of the Project from Rs. 11.56 crores in 1958 to Rs. 46.79 crores in 1965, the Committee have been informed in a written note that the following reasons are responsible for the increase:

1. The concentration of the flow in the river Great Gandak has shown a tendency of intensification towards the right side, and water started spilling into the Nepal territory, flooding sizeable areas in Nepal and the districts of Gorakhpur and Deoria in U.P. which could also do great damage to the proposed Western Gandak Canal unless effectively stopped. Hence provision of Rs. 159.12 lakhs had been made for protection works after detailed examination and approval of Gandak Control Board.
2. Increase in length of surface and seepage drains for effective drainage of commanded area.
3. The Planning Commission's decision that the Project authorities would be responsible for the construction of the watercourse at Government cost for chaks of 100 acres and above. Accordingly, a sum of Rs. 352.38 lakhs had to be provided in the Revised Estimate towards cost of water-courses.
4. Increase in the cost of labour and materials since 1961. In preparing the recast estimate of 1966, an enhanced rate of 12½ per cent for unskilled labour and 15 per cent for skilled labour over the sanctioned schedule of rates for labour in 1963 had been provided. The Gandak Control Board in its 10th meeting at Lucknow in 22nd November,

- 1967 accorded its approval for enhancement of rate of unskilled labour to Rs. 3.00 per day as against Rs. 2.00 provided in the sanctioned schedule of rate of 1963, involving an increase of 50 per cent. In the same meeting, the wages of skilled labour were enhanced upto a maximum of 25 per cent over the rates sanctioned for Gandak Project in 1963. Due to the above enhancement in labour rates, there will be a corresponding increase in the cost of the project.
5. The increase in the cost of labour and materials including increase in the land compensation fixation which is now based on market rates in respect of permanent land.
 6. A large portion of the excess i.e. Rs. 289.50 lakhs is under the item of canal lining which is due to the increase in the quantity of lining work as subsequently decided and rate therefor.
 7. Increase in provision under buildings now based on the percentage given by the Rates and Costs Committee of the Government of India.
 8. Increase in cost of Railway crossings both across the Main Canal and distribution system. There was no provision for Railway crossings on the distribution system in the original project.
 9. Increase in length of drainage channels.
 10. During the 1966 floods, 14 miles Chitauni Bund which was affording some protection to the Gandak Canal in its reach from mile 21 to mile 28 got breached between mile 3.0 to mile 4.0 by the shifting of the course of River Gandak which eroded its right bank. As a result a spill with an approximate discharge of 50,000 cusecs started flowing behind the bund attacking the main Gandak Canal in its reach between mile 24 to mile 27:4 causing several breaches therein. Similarly, during this flood, severe action was experience on River Training Works constructed in Nepal. River Training Works in U.P. and further strengthening of River Training Works already constructed in Nepal were thereafter suggested to prevent the spilling of River Gandak effectively for the safety of Western Gandak Canal by the Chitauni experiments and recommendations made by the Irrigation Research Institute, Roorkee. These works are estimated to cost Rs. 450 lakhs.

A statement giving the break-up of rise in the cost of land, labour, materials, etc. which have been instrumental in raising the cost of the Project may be seen at Appendix I.

The details of the revised estimates are as follows:

	Rupees in lakhs
(a) Bihar Portion	
(i) Barrage and appurtenant works including cost of navigation lock	1786.00
(ii) (a) Nepal Eastern Canal	231.00
(b) Nepal Western Canal	85.42
(c) Nepal Power House	294.25
(iii) (a) Tirhut Canal	3640.50
(b) Saran Canal	1864.50
(c) Don Canal	645.25
(d) Main Western Canal	438.00
(iv) (a) Ghorasahan Branch Canal	378.50
(b) Dhanaha Branch Canal	46.00
(v) Water courses in Tirhut, Saran Don Canals and on Dhanaha and Ghorasahan Branch Canals	893.97
	10,303.39
Say Rs. 10,303 lakhs.	
(b) U. P. Portion	
(i) River Training Works in Nepal	209.12
(ii) River Training Works in U. P.	400.00
(iii) Main Western Gandak Canal	2076.95
(iv) Distribution system	1641.74
(v) Water courses	351.38
TOTAL	4679.19

2.8. The revised estimate of Rs. 94.91 crores relating to the Bihar portion was submitted by the Bihar Government to the Central Water and Power Commission in December, 1965. The comments of the Central Water and Power Commission were received by the State Government in April, 1967. The replies to the comments have been furnished by the State Government to the Central Water and Power Commission and the same are under finalisation in Central Water and Power Commission. The revised cost in the meantime is estimated to have gone upto Rs. 103.04 crores.

2.9. As regards the U.P. portion of the Project, the preliminary estimate of Rs. 11.56 crores was first revised in 1961 to Rs. 15.61 crores. The first revised estimates were received in the Central Water and Power Commission on 12th January, 1962. The same were cleared after comments of the Central Water and Power Commission and further replies of the State Government to the Central Water and Power Commission etc. in May, 1967. However, in the same month, i.e. May, 1967, another revised estimate of Rs. 46.79 crores was received in Central Water and Power Commission and is still under their examination. The proposed revised cost has since gone up to nearly Rs. 54 crores (tentative) due to enhancement of rates. Thus the revised estimated cost for the whole project is likely to go upto Rs. 154.42 crores. A statement showing the details of dates of receipt and sending of comments etc. by Central Water and Power Commission may be seen at Appendix II.

2.10. When asked about the reasons for the increase and how far the delay in the execution of the project has been responsible for this increase, the representative of the Ministry of Irrigation and Power has in his evidence stated before the Committee "It is true that if the execution of the project had been undertaken earlier, the cost would have been less because there has been increase in cost of materials, wages and so on. But, as we would have liked, we could not go ahead with them for want of resources. . . . The Ministry and the Planning Commission have issued a large number of circulars about the need for proper preparation of plans and estimates before a project is sanctioned. That is fully recognised because before sanctioning a project Government should know how much they have to spend and how they should determine the relative priority and so on. So, while we have every intention to prepare the estimates as accurately as possible, the estimate of large irrigation projects are fraught with certain imponderable difficulties". When asked why the increase in estimates has been so substantial, the representative of the Ministry

of Irrigation and Power stated "We have been trying to see whether a norm could be fixed. Having regard to the past experience. I may say that the variation in every project has been quite substantial."

2.11. When asked about the reasons for the change in designs etc., the representative of the Ministry of Irrigation and Power has stated that "When the project was sanctioned, to the best of the knowledge of the experts at that time, all factors were taken into account. This is not a static thing. In the case of the design of these projects, often major changes take place all over the world, and after various experiments and tests in the laboratories and so on, design changes are made. In the light of knowledge at that time, all due care was taken to provide for various factors." When asked if the present revised estimates are steady, or will the same go up further, the representative of the Ministry of Irrigation and Power has stated "After the 1966 estimates were prepared, there has been a rise of about 15 per cent by way of costs and it will have to be taken into account. There might be a variation upto 10 per cent in the estimate."

2.12. The Committee note that the estimated cost of the Project has risen from Rs. 52.03 crores to Rs. 149.83 crores i.e. an increase of about 185 per cent and by the time the project is finally completed, the estimated cost is likely to go up still further. The Committee have noted that this huge increase in cost is stated to be a common feature in the case of all the major river valley projects in the country. The Committee feel that the economics of the Project get vitiated by revision of the Project estimate and the allocation of the resources for different projects also gets disrupted.

In regard to Gandak Project, the Committee feel that while rise in cost of land, labour and material is to some extent responsible for this increase, factors like subsequent changes in the designs, additions to works etc. were also to a large extent, responsible for the increase in costs. The Committee feel that these factors could have been envisaged in the initial stages so that the necessity of subsequent changes on a large scale could be obviated. The Committee, therefore, recommend that before a river-valley project is taken up for execution, the estimates for the same should be prepared after full examination of all aspects and necessary investigations so that the need for subsequent changes is avoided.

2.13. The Committee further suggest that the reasons for the enormous increases in the estimates of most of the river-valley projects in the country should be examined fully by the Government and steps taken to avoid increases of such dimensions in future.

2.14. The Committee further note that there has been inordinate delay in the Central Water and Power Commission in the clearance of the revised estimates. The revised estimates of the Project relating to Bihar Portion which were submitted in 1965 have not yet been cleared and in the meantime another revision has become necessary. The first revised project estimates relating to the U.P. portion which were submitted in January, 1962 were cleared in May, 1967 only while in the same month another revision had become necessary. The second revised estimate has not been cleared so far. The Committee are not happy over the delay of 5 years in clearing the project estimates. The Committee noted a similar tendency in the case of Kosi Project also and in their report on Kosi Project, they have already recommended that "as and when the revised estimates for any project are unavoidable, the same should be examined fully and expeditiously by the Central Water and Power Commission so as to avoid delays, doubts and uncertainties about execution." The Committee cannot over-emphasise the need for expeditious vetting of the Project estimates so that there is no delay in execution. In the interest of maximum economy and efficiency it is desirable to prepare properly phased plans for execution of the various components of the Project.

B. Administrative Set-up

2.15. There is a Secretariat Department, known as the River Valley Projects Department, which is incharge of execution of the four major river valley projects (Kosi, Gandak, Sone and Tenughat) of the Bihar Government. The Chief Administrator is the administrative head of the Department. He is also Secretary to Government. The other Secretariat officers to assist him are at present one Additional Secretary, one Joint Secretary, one Deputy Secretary and one Under Secretary with the usual ministerial and supervisory staff.

2.16. For the Gandak Project there is a Chief Engineer who is the technical head of the Project. He has the usual technical officers and staff under him e.g. Superintending Engineers, Executive Engineers,, Assistant Engineers etc. The Secretariat and the office of the Chief Engineer are located at the same place and function as one amalgamated unit. The other functionaries at headquarters are the Chief Accounts Officer-cum-Financial Adviser, the Director of Land Acquisition and Rehabilitation, and the Director of Purchase and Transport, who are common for all the projects. The Chief Accounts Officer is responsible for maintaining the accounts of the various projects, and in his capacity as Financial Adviser, he gives advice to the Project authorities on financial matters. The Land Acquisition Organisation of the Department

functions under the Director, who is also incharge of rehabilitation of the people affected by the project works. The Department has adopted the centralised system of purchases under a set of rules approved by the State Government. At the head of this organisation is a Director, who is also responsible for transport of the materials purchased to the work sites. While working directly under the Chief Administrator, these common service departments render all possible assistance to the different Chief Engineers incharge of execution of different projects and much duplication of work and effort is thus avoided, and the experience and knowledge gathered over a long period of time are thus readily available to all concerned.

The works of Western Gandak Canal (U.P. portion) are being executed through the Irrigation Department, Uttar Pradesh.

Organisation in the Government of India.

2.17. The work relating to the Gandak Project is being looked after by the Joint Secretary in the Ministry of Irrigation and Power who functions under the overall control of the Secretary in the Ministry. The Joint Secretary is assisted by a Deputy Secretary and other normal Secretariat staff viz. an Under Secretary and Supervisory staff below him. The Gandak Project is, however, only one among several projects handled by these officers. Technical advice of the Central Water and Power Commission is obtained as and when required.

2.18. The following work is done in the Central Water and Power Commission relating to the Gandak Project:

1. Preparation of preliminary designs of Gandak Barrage with alternate studies for single and multi-akis barrage.
2. Preparation of specification designs and drawings for inviting tenders.
3. Detailed construction drawings of the barrage, head-regulator, excluding the canals and the canal structures.
4. Technical advice on typical construction problems and proforma.
5. Technical advice on flood protection and river training works.

2.19. The charges for services rendered by Central Water and Power Commission are on the basis of actual cost plus usual 60 per cent overhead charges and are recovered from the State Government. So far as the Ministry is concerned no part of its establishment cost is recovered from the State Government for any advice rendered in respect of the Gandak Project.

2.20. When asked during evidence about the basis on which these charges are calculated, the representative of the Ministry of Irrigation and Power has stated before the Committee "In working out, the Central Water and Power Commission has got its consultancy in design works in various States. For that purpose, they are treated as a commercial organisation and they recover the charges, but on the basis of the actual work done, upto the level of Assistant Directors, the account is kept of the number of hours and so on. Above that come the Deputy Directors, Directors, Chief Engineer, Members and so on. Some *ad hoc* charges on the basis of the average work done have been levied. The leave salary charges, pensionary charges and so on work out to more than 60 per cent. This charging is a continuous process. From this project, we have recovered Rs. 12 lakhs".

2.21. Questioned if the present control exercised by the Central Water and Power Commission over the execution of the project is adequate the representative of the Ministry of Irrigation and Power has stated before the Committee "Irrigation is a State Subject and the States are autonomous. However, the Central Water and Power Commission functions in two or three capacities. One is overall vetting of the project when it comes to us. Second is designing on payment. Third is general guidance. We do advance funds but they are to the State Government as a whole. Ours is a continuous and informal contact with them. A balance has to be struck between the autonomy of States and proper use of loan funds. For that we have the Control Board where both the States and Central are represented."

Gandak Control Board

2.22. There is a Control Board which is in overall charge of the Project, including its technical and financial aspects. The Governor of Bihar is the Chairman of this Board. The other members are the Irrigation Ministers of Bihar and Uttar Pradesh, the Development Commissioner, Chief Engineer, Gandak Project, Finance Secretary, Bihar and other officials of Bihar; and a representative of the Ministry, of Finance, Government of India, a representative of the Ministry of Irrigation and Power, Government of India and a representative of the Central Water and Power Commission and representatives of the Government of Uttar Pradesh. The Chief Administrator is the Member Secretary of the Board. Important technical matters, and estimates and contracts beyond the powers of the project officers are placed before the Board for approval.

2.23. The Gandak Control Board has constituted a number of committees which are as follows:—

(1) *Technical Committee*: The Gandak Control Board decided to constitute a Technical Committee in its first meeting held at Patna on 21.11.61 consisting of Member Design and Research, Central Water and Power Commission, Shri A. C. Mitra, Chief Engineer, U.P. Government and Shri J. P. Jain, Chief Engineer, East U.P., Shri Debes Mookerjee, Chief Engineer, Kosi Project, Bihar and Shri P. R. Guha, Chief Engineer, Gandak and Sone Projects, with Shri P. R. Guha as its convener. It was reconstituted later in its 8th meeting held at Patna on 6.8.66 on the basis of the designations.

The functions of this Committee are of a technical nature i.e. examination of designs, estimates, programme of work taking into consideration the organisational capacity and availability of material etc.

(2) *Emergency Committee*: The Gandak Control Board decided to constitute at their first meeting held on 21.11.1961 another Committee known as an Emergency Committee consisting of (1) Joint Secretary, Ministry of Finance (2) Secretary, Irrigation U.P. (3) Chief Engineer, East U.P. (4) Finance Secretary Bihar and (5) Chief Engineer, Gandak Project, Bihar with the Chief Administrator, River Valley Projects Department as the Chairman to deal with emergent matters which cannot wait for the consideration of the Board.

(3) *Scrutiny Committee*: The Gandak Control Board in its 7th meeting held at Valmikinagar on 11.12.1966 formed a Scrutiny Committee to make close scrutiny of the revised estimates of Gandak Project framed by Government of U.P. and Bihar after examination by the Technical Committee. It consists of:—

- (1) A representative of the Ministry of Finance (Department of Co-ordination), Government of India.
- (2) Secretary, Finance Deptt., Government of U.P.
- (3) Chief Administrator, River Valley Projects Department, Government of Bihar.
- (4) Secretary, Irrigation Department, Government of Uttar Pradesh.
- (5) Engineer-in-Chief, Irrigation Department, Uttar Pradesh.
- (6) Chief Engineer, Irrigation Department, Lucknow.
- (7) Chief Engineer, Gandak Project, River Valley Projects Department, Lucknow.
- (8) Financial Adviser-cum-Chief Accounts Officer, River Valley Projects Department, Bihar.

The Chief Administrator, River Valley Projects Department, Bihar would act as convener of the Committee.

2.24. The Board has so far held ten meetings. The dates of the meetings together with the important decisions taken at the meetings are given at Appendix III.

2.25. The Board has a small office consisting of a part-time Assistant Secretary and a few Assistants. The yearly expenditure over Board's office is noted below:—

1962—63—Rs.	13, 100·00
1963-64—Rs.	10,730:00
1964-65—Rs.	14,000·00
1965-66—Rs.	16,800·00
1966-67—Rs.	15,200·00
1967-68—Rs.	19,800·00

2.26. The expenditure is charged to the estimate for the project pertaining to Bihar. The members of the Board are all Government servants and they draw their pay and allowances from their respective establishments.

2.27. The two State Governments are in charge of the execution of the Project in their respective States. The decisions of the Board are generally unanimous and the two State Governments send reports of the action taken on the decisions of the Board for the information of the Board. A statement showing action taken on the decisions of the Board is placed before it at each meeting.

2.28. When asked during evidence if any proposal for the reorganisation of the Gandak Control Board was under the consideration of the Government, the representative of the Ministry of Irrigation and Power has stated before the Committee "In the context of the requests received from the State Governments from time to time and the views expressed by the Finance Ministry, the Planning Commission and ourselves, we thought it would not be right for us to take over the State projects, but we considered how best we could help further in the matter. Some form of the reorganisation of the Control Board with some minor changes in the composition have been mooted. Because of the Inter-State nature, we thought whether the induction of the Union Minister of Irrigation as Chairman might be useful. That is being considered".

2.29. When asked if there had been any points of differences between the Central and participating State Governments, the representative of the Ministry of Irrigation and Power has stated as follows:—

“The Control Board machinery is a very effective way of settling inter-State problems because we are all represented there. The Central Government and the two State Governments are there on most of the projects. The points of difference are sorted out there and when they so desire they set up sub-Committees to go into the problems. Sometimes the Centre uses its good offices, at times through the Central Ministers and so on, to get the issues settled”.

2.30. From the resolution issued by the Government of India, the Committee note that the Gandak Control Board was set up with a view to ensuring efficient, economical and early execution of the Gandak Project. The Committee also note that the Control Board machinery has been very helpful in resolving inter-State disputes. The Committee have also been informed that the question of re-organising the Board with the Union Minister of Irrigation and Power as Chairman is under the consideration of the Government.*

Gandak Co-ordination Committee.

2.31. A part of the work of the Gandak Project lies in Nepal. Work on the Gandak Project was started on the basis of an agreement between the Government of India and His Majesty's Government of Nepal, which was executed on 4th December, 1959. A Co-ordination Committee has been constituted for dealing with all matters of common interest between the two countries. Under the agreement, a Minister of the Government of Nepal is the Chairman, while the Chief Administrator is the Member-Secretary of this Committee. The other members of the Committee are the Joint Secretary to the Government of India, Ministry of Irrigation & Power, Director, Indian Cooperation Mission, Nepal and the officials of the Government of Nepal.

2.32. The Committee has been formed to coordinate activities of Gandak Project with His Majesty's Government of Nepal to remove bottlenecks, if any, with the Nepal Government and also to expedite decisions of Nepal Government as in the case of Land Acquisition in Nepal, customs duty on equipment etc. required for works etc. in Nepal.

*The Committee have been informed at the time of factual verification that the proposal of reorganizing the Gandak Control Board has since been dropped.

2.33. Since the constitution of the Committee, five meetings have been held, the first on 4th August, 1961, the second on 27th December, 1962, the third on 25th March, 1966 and the fourth on the 23rd and 24th January, 1967 and the fifth in April, 1968. Each Government bears the cost of its representative attending such meetings.

2.34. When asked during official evidence how far the constitution of the Coordination Committee had been useful in resolving differences between India and Nepal, the representative of the Ministry of Irrigation and Power has stated before the Committee: "The deliberations of the Gandak Co-ordination Committee have been extremely useful in sorting out many differences because it brings up all together periodically and they settle most of the problems. As you know the customs duties and so on have been settled there. I think more frequent meetings would be useful". When asked why there has been only five meetings of the Co-ordination Committee and the reasons for the big gap between 1962 and 1966, he stated "The Gandak Co-ordination Committee works only when at the official level we are not able to resolve matters. In addition, our department has got a Liaison Officer and own establishment at Kathmandu, and we are in constant day-to-day touch with the Nepal Government authorities. Only when the matters come to such a stage when we feel that the convening of the Committee is necessary, then alone the Committee meets There was a big gap because the work was going on smoothly. When we find that the alignments were not getting finalised or when we find that there was difficulty with regard to the customs, we call this meeting."

2.35. When asked if all the decisions taken by the Gandak Co-ordination Committee are being implemented, the Committee have been informed in a written note that "The decisions taken by the Co-ordination Committee to deal with matters of common interest regarding the Gandak Project are in the nature of recommendations to the two Governments and implementation of these decisions depends upon the acceptance of the same by the Governments concerned. As such the possibility of some delay taking place in the implementation of the recommendation of the Coordination Committee is not ruled out. In case of delay, His Majesty's Government of Nepal is approached through diplomatic channels with a view to persuading them to implement the recommendations of the Co-ordination Committee".

2.36. Questioned if there has been any difficulty in holding the meetings of the Nepal Coordination Committee more frequently, the Committee have been informed in a written note that "There has

not been much difficulty in holding meetings, but the dates are determined having regard to the number of items to be discussed and their urgency”.

2.37. The Committee note that the deliberations of the Gandak Co-ordination Committee have been useful in sorting out many difficulties and resolving differences with His Majesty's Government of Nepal and that the discussions at the sittings of the Committee have been quite fruitful. The Committee hope that meetings of the Co-ordination Committee would be held regularly.

CHAPTER III

PATTERN OF FINANCIAL ASSISTANCE

A. Pattern and Quantum of Financial Assistance

3.1. The Gandak Project is being financed by means of cent per cent Loan assistance given by the Central Government. Besides this, assistance is given by way of grant to the Government of Bihar for execution of Nepal Benefit Schemes.

3.2. Upto 1962-63, there was no specific loan assistance by the Government of India for this Project. The estimate for this Project was included in the overall Plan of the State Government and the State Government received Central assistance for its schemes together depending on its resources. In December, 1962, the Government of India were requested for separate loan assistance for financing this Project because the State Government found that it was extremely difficult to finance this Project (as well as the Sone Barrage Project) along with their commitments for other Third Plan schemes without specific Central assistance. The Government of India communicated their decision accepting the proposal of the State Government in August, 1963. The present arrangement is that the Government of India give specific loan assistance for the Gandak Project work in Bihar and grant for Nepal benefit schemes like Nepal Eastern Canal, Nepal Western Canal and Nepal Power House. The loan assistance is to the extent of provision made for the Gandak Project within the State Plan ceiling.

3.3. In a note submitted to the Committee in 1967, the Government of Bihar have stated that "the arrangement is not an improvement on the previous arrangement under which the Project had to depend on the State resources for provisions in the budget. For example, this year's (1967-68) Plan of the State is of the order of Rs. 66.36 crores. Against the minimum requirements of Rs. 13.25 crores (excluding Rs. 2.50 crores on account of Nepal Benefit Schemes which is expected from the Government of India as grant) for achieving the target of giving irrigation to 2.50 lakh acres in 1968 Kharif, only Rs. 6.80 crores has been provided in the State's Plan. This is only half the minimum inescapable requirement of the Project for the year. From the project point of view, it is immaterial whether

there is specific loan assistance for this project or the financial assistance from the Centre merges in the overall assistance to the State Government, if the Grant of specific loan assistance is conditioned by the limit of State Plan."

3.4. When asked to state the reasons for adopting the system of earmarked loan assistance for Gandak Project, the representative of the Ministry of Irrigation and Power has stated before the Committee "The system of earmarked loan assistance is not peculiar to Gandak alone. It applies to all big projects costing more than Rs. 30 crores or so. The principle of earmarked loan assistance was followed from May, 1958. The Department of Economic Affairs issued a circular laying down the procedure for releasing central assistance. They said that this procedure will apply to all loans and grants given to State Governments in respect of certain schemes. First this was made applicable only to three projects. It was extended to certain other projects such as Bhakra-Nangal, Rihand, Chambal, Nagarjunasagar, Kosi, Rajasthan Canal etc." Explaining the philosophy underlying the earmarking of assistance the representative of the Ministry has stated: "It was felt that for certain major projects which required continuity, funds should be provided year after year, so that they should not suffer. It was further felt that the amount fixed should be within the State ceiling. Further, it was considered that if the funds of these projects were merged into the normal assistance of States, then probably allocations may vary from year to year on considerations other than purely technical requirements. Therefore, it was felt that the working group should go into the requirements of these projects and recommend that the State Governments should know that amount is allocated for this purpose so that it is not used for other sectors. . . . Earmarking or non-earmarking does not make any difference from the financial point of view."

3.5. When asked about the reaction of the Government of Bihar regarding the system of cent per cent earmarked loan assistance, the representative of the Ministry of Irrigation and Power has stated: "This is an advantage to the project because right at the beginning of the year, the Irrigation Department will know what assistance they will get. If it is merged with the budget of the State, the availability will depend upon the State Finance Department. There has been no complaint from the Bihar Government so far saying that this is not working satisfactorily."

3.6. The representative of the Ministry of Finance has stated that "The purpose of showing one hundred per cent Central assistance is only to ensure that no diversions take place from these to other items. Secondly, this is done in order to show its importance so that a large magnitude is always in view and both the State and the Centre try not to reduce the outlay on that to the extent to which they can help it."

Questions of Financial Assistance

3.7. The Gandak Project was sanctioned for execution in the Second Plan period, and a provision of Rs. 5 crores was made for Gandak and Sone Barrage Projects put together. Except some preliminaries, not much could be done during the Second Plan. In the Third Plan, a sum of Rs. 20 crores was provided, but only a little over Rs. 17 crores could be made available for expenditure.

3.8. During the concluding stages of the Third Plan, the potentialities of the Gandak Project came to be fully appreciated. A series of studies were undertaken with the object of securing maximum benefits from this project, in the shortest possible time in the context of the supreme urgency of minimising agricultural production. Accordingly, a programme of work involving an outlay of Rs. 66.33 crores during the Fourth Plan was approved by the Gandak Control Board in its eighth meeting held on the 6th August, 1966. In due course, the programme was accepted also by the Working Group set up by the Government of India to examine the Fourth Plan proposals of the various States. Additional funds were made available by the Government of India in 1966-67 for completion of the programme so framed. The provision of Rs. 8 crores made for this project for 1966-67 was raised to Rs. 10 crores.

3.9. In 1967-68, the situation in Bihar was in many respects exceptional. Bihar passed through one of the worst droughts in the living memory, and famine was declared in large parts of the State, necessitating extensive relief works including execution of hard manual labour schemes. At the same time the drought also showed the importance of irrigation based upon perennial sources of water supply. The Gandak Project being in an advanced stage of execution, a review was made with a view to finding out as to whether the pace of execution could not be further accelerated, so as to secure irrigation benefits earlier than envisaged in the plan of work referred to in the preceding para. As a result of this review, it was found that

against a provision of Rs. 14.82 crores in the plan for the year 1967-68, because of the administrative steps taken, earth-moving and other machineries collected, as much as Rs. 18 crores could be usefully spent, and the Government of India was approached accordingly to make this sum available.

3.10. At this stage the financial picture confronting the country came to be seen more clearly and it was realised that all the past forecasts and expectations were going to fall through. The Annual Plan of the State involving an outlay of Rs. 95 crores for all the schemes was reduced to Rs. 85 crores. Further study revealed that even this pace of expenditure could not be sustained and the plan had to be scaled down to Rs. 75 crores. Later on it was realised that the total outlay on Plan schemes in the year 1967-68 could only be of the order of Rs. 66.36 crores.

3.11. In the light of the financial difficulties mentioned above, the question of provision of funds for the Gandak Project was examined in detail on the 22nd May, 1967 in a meeting in which the Adviser, Irrigation and Power, Planning Commission, Officials of the Ministry of Irrigation and Power, and those of the Ministry of Finance participated. The entire progress of work was reviewed, and the programme of work was scrutinised keeping in view the objective of securing irrigation for an area of 2.5 lakh acres in 1968. As a result of this scrutiny, an expenditure of Rs. 13.25 crores was considered inescapable. In addition, the Government of India had to make available Rs. 2.50 crores outside the State Plan ceilings for schemes of benefits to Nepal.

3.12. In the State Plan, the provision required to be made on account of this project, during (1967-68), was of the order of Rs. 12.32 crores. But when the size of the Plan was reduced from Rs. 95 crores to Rs. 85 crores, the provision for this project was correspondingly reduced to Rs. 11.05 crores. When the State Plan was reduced to Rs. 75 crores, the provision had to be reduced to Rs. 7.83 crores. When the total outlay was further reduced to Rs. 66.36 crores, the outlay on the Project was further reduced and actually an amount of Rs. 6.8 crores was provided excluding Rs. 3.53 crores provided for Nepal Benefit Scheme. A statement giving the amount of loans/grants asked for by the State Government, amounts assured by Government of India, expenditure incurred by the State Government of

Bihar and amount actually released by the Government of India is given below:—

Year	Amount asked for by the State Government		Amounts assured by Government of India		Expenditure incurred by State Government		Amount actually released by Govt of India		Remarks
	Loan	Grant	Loan	Grant	Loan	Grant	Loan	Grant	
(in lakh rupees)									
1962-63			232				
1963-64	275		Nil	Nil	219		20		
1964-65	500		409 + 50	..	462	75	500		
1965-66	700		300 + 50	200	631	52	493	100	
1966-67	925	75	700	100	1025	76	938	50	
1967-68	1325	250	680	353			680	353	

3.13. In a note submitted to the Committee in 1967, the Government of Bihar had stated that "This amount of Rs. 6.80 crores falls considerably short of requirements notified by the Project authorities on the basis of the construction programme for the year. The inescapable requirement is Rs. 13.25 crores (excluding Rs. 2.50 crores to be given by Government of India as grant for Nepal Benefit Schemes) though the Department has a construction programme of Rs. 18 crores (including the amount of Rs. 2.50 crores). If this amount of Rs. 18 crores is allotted, it will be possible to resume the work of Saran Canal which has now been practically stopped on account of inadequacy of funds. With this programme of Rs. 18 crores, work worth Rs. 2.43 crores can be done on the Saran Canal. The work on the Main Western Canal in Nepal, and the Don Branch Canal could also be accelerated. . . . To remove the difficulty of funds, attempts were made to hand over this Project to the Government of India for financing. The last reference was made on the 3rd May, 1967 giving justification for this request. It was pointed out that a Project of this magnitude and usefulness should not be left to be financed from the slender resources of the State. If Centre takes it over there can be an assurance of speedy allocation of fund for systematic, planned and speedy execution of the Project. The Centre has taken upon itself the responsibility of setting up Steel Plants and other heavy industries and is also financing the Farakka Barrage Project. In the context of desperate food situation

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in Bihar, Gandak Project is no less important than any of these Projects. Unfortunately, the Government of India have not agreed to this suggestion."

3.14. In his evidence before the Committee, the representative of the Government of Bihar further stated that "Prof. Thacker (Member of the Planning Commission) in fact visited the place and felt that the accelerated programme of work would involve certain outlays. In 1966-67, the outlay was put at Rs. 10 crores; in 1967-68, it was put at Rs. 14.83 crores but in 1968-69, it was put at Rs. 14.64 crores. But, Sir, for none of these years, we got these amounts. In 1967-68, the position was that we geared up our organisation further and we were in a position to spend almost Rs. 18 crores with the administrative arrangements taken in hand. But in 1967-68, we had to begin with Rs. 6.8 crores. Later on, for Nepal Benefit Scheme, the Government of India made available partly on account of arrear payment and partly for current expenditure Rs. 3.53 crores making a total of Rs. 10.33 crores. This was all that was done in spite of our repeated assertions that we would be in a position to spend Rs. 18 crores".

3.15. When asked what was the main bottleneck in the execution of the project, as per the time-schedule, the representative of the Government of Bihar has stated before the Committee, "The main bottleneck so far as we are concerned, seems to be the uncertainty with regard to funds. I have a clear experience of the last two years; we planned a programme for various amounts; but we cannot issue instructions to our field staff to adopt any particular pattern unless we know what the amount is going to be. Even this year, unfortunately for us in Bihar, the final figure which the Gandak Project is going to get is not known for certain, because the State Plan so far as the Gandak is concerned is yet to be finalised. The uncertainty with regard to the fund does result in clear instructions not going down the line..... In the beginning there might have been organisational difficulties in regard to contractors and so on. But I think now the main thing is the paucity for the allocation of funds upto a certain point."

3.16. When asked if there was any instance where the amount earmarked for Gandak Project remained unspent, the representative of the Government of Bihar has stated, "In case of Gandak Project we have never spent less funds than what we have been allotted. For some years we have over-spent. The position is this—we have spent more than allotted funds and in no year the funds have lapsed so far as the Gandak Project is concerned."

3.17. When asked as to why the allocation of funds for Gandak Project for 1967-68 was reduced from Rs. 12.32 crores to Rs. 6.80

crores, the Committee have been informed through a written note that "The size of the Bihar Plan for 1967-68 has been reduced progressively from Rs. 95 crores to Rs. 66.36 crores. The outlay on Major Irrigation Projects under different stages of the State Plan and the project-wise distribution of funds made by the State Government, is given below to explain the position:—

Size of the State Plan	Rs. 95 crores	Rs. 85 crores	Rs. 75 crores	Rs. 66.36 crores
Allocation for Major Irrigation Projects	17.00	15.50	12.28	11.25
Project-wise distribution				
Kosi Project	3.51	3.28	3.28	3.28
Sone Barrage Project	1.17	1.17	1.17	1.17
Gandak Project	12.32	11.05	7.83	6.80

3.18 It will appear from the above statement that while the outlay for the Major Irrigation Projects was reduced from Rs. 17 crores to Rs. 11.25 crores, the Kosi and Sone Barrage Projects having reached the completion stage for which the minimum inescapable requirement had to be made, most of the reduction had to be made in the provision of the Gandak Project."

3.19. Asked to state their reaction about the suggestion that the Gandak Project should be taken over by the Central Government, the Ministry of Irrigation and Power in a written note have stated:—

"The suggestion that major irrigation projects should be transferred to the Central has been made to the Central Government on more than one occasion. It seems to have been made primarily on the ground that adequate funds cannot be provided within the State Plan for such projects. However, the resources of the Centre have an overall limitation. Such major projects like Gandak are now financed as part of the State Plan. The transfer of such a project to the Centre would not really solve the question of finding additional finances as such a transfer would correspondingly reduce the Central assistance for the State Plan and will, therefore, be of no real advantage to the State. On the other hand, certain

aspects have to be considered like the fact that irrigation being a State subject, fixation, assessment and realisation of water rates by the Centre likely to create administrative difficulties, the responsibility for management and operation of irrigation projects cannot be bifurcated from the responsibility for the agricultural development of the command area which would remain in the hands of the State. It has, therefore, been considered that, for the present, the best that can be done for the early completion of the Gandak Project would be to make adequate provision in the State Annual Plan. As far as the Centre is concerned, its anxiety for expediting the completion of the project would be evidenced from the fact that accelerated Central assistance of Rs. one crore was made available for it (Bihar) in 1964-65 and Rs. 50 lakhs in 1965-66. Since the resources position at the Centre during this year (1967-68) is tight, it does not permit any additional assistance to the State Government beyond Rs. 6.80 crores for the loan portion and Rs. 3 crores for the Nepal Benefit allocation, which is given by way of grant."

3.20. Regarding the allocation of funds for the Project by the Centre, the representative of the Ministry of Irrigation and Power has stated in his evidence before the Committee "Government has its own limitations. Resources at the Centre have also to be taken into account. Plan outlay is laid down for the States. The States also have their own responsibility. Government of India, very often, could not give additional assistance though in a few cases, including this case of Gandak Project, they did give accelerated assistance in the last year of the Third Five Year Plan ranging from half to one crore of rupees out of their resources."

3.21. Regarding the allocation of funds for the Gandak Project for the year 1968-69, the Committee have been informed that "Communications were received from the State Government of Bihar requesting for additional financial assistance over and above the ceiling of Central assistance for State Plan. Out of the provision of Rs. 25 crores in the Central Budget for 1968-69 as special financial assistance to some selected irrigation project, it was decided that the Gandak Project should be given an assistance of Rs. 8 crores during the year—Rs. 6 crores to Bihar and Rs. 2 crores to Uttar Pradesh. Out of Rs. 6 crores allotted to Bihar Rs. 1 crore will be given to Uttar Pradesh towards Bihar's share of cost of common works in Uttar Pradesh "

3.22. The allocation of funds for the Gandak Project for the year 1968-69 is as follows:—

	Rs. in lakhs
Bihar	550·00 +600·00
Uttar Pradesh	450·00 +200·00
Nepal portion	250·00
	20,50·00

A statement showing the amount of Loans|Grants asked for by the Government of Bihar, recommended by Working Group and sanctioned by Central Government for execution of the Gandak Project is shown at Appendix IV.

3.23. When asked how the amount allocated for the Gandak Project is released, the Committee have been informed in a written note that the amount to be released for the Gandak Project every year is determined through the Annual Plan discussions that the Planning Commission have with the State Governments; the Ministries of Finance and Irrigation and Power are closely associated in these Annual Plan discussions. According to the Standing instructions of the Planning Commission, copies of the annual Plan proposals relating to the Irrigation and Power Sector are sent to the Ministry of Irrigation and Power and also the Ministry of Finance by the State Government direct. These are examined in the Ministry of Irrigation and Power and Central Water and Power Commission and also in the Ministry of Finance and in the Irrigation and Power Division in the Planning Commission. Later a Working Group for Irrigation and another for Power is set up each year by the Planning Commission to consider the Annual Plan proposals in detail. At these Working Group meetings representatives of the State Government are present and detailed discussions are held regarding the progress of the project, the programmes for the ensuing year, benefits to be achieved etc. As a result of these deliberations, recommendations are made by the Working Group to the Planning Commission about the amounts to be allotted for each project.

3.24. Later, in the Planning Commission recommendations in respect of all the sectors of development are consolidated and considered by the Programme Adviser of the Planning Commission. As a result of his intimate knowledge of the State's Plans, the position regarding the State resources and the likely Central assistance available to the State, the Programme Adviser makes his recommendations to the Planning Commission for allocation to different sectors and also in respect of certain major projects. These are then considered by the Planning Commission in consultation with the State Chief Ministers, the Finance Minister and sometimes the Minister concerned also. As a result of these discussions, the Annual Plan for State is normally finalised and it forms the basis for the allocation of Central assistance to the States as also for the allotment of funds by different sections and important projects in some of the sectors like the Gandak. These figures are then finalised between the Planning Commission and the Ministry of Finance and the Planning Commission communicates the likely Central assistance to the States in the coming year. Ministry of Finance later communicates the allotment of Central assistance for individual schemes. Ministry of Irrigation and Power releases the funds to the State Governments on the basis of this allotment communicated to them by the Ministry of Finance. In deciding the size of the Annual Plan for the State as also the allocation for the individual projects like the Gandak, the Planning Commission take into account State resources for the Plan, likely Central assistance, their performance in the previous year and programme for the next year.

3.25. When asked if the money was being given to State Governments in time, the representative of the Ministry of Finance has stated in his evidence before the Committee, "There is no question of the State Government not having money because we have now liberalised the system so much that we start giving them advance money. In the case of all items other than major irrigation we pay a monthly ways and means advance to every State Government for the first ten months. Then we ask them to give their departmental accounts. As soon as they give their departmental accounts we release the balance also. It is very rarely that the State Government is suffering because we have not paid."

3.26. The Committee note that although the Gandak Project was taken up for execution in 1962-63 and the Government of India agreed to provide cent per cent earmarked loan assistance for the project in August, 1963, the project has continuously been suffering

from dearth of funds. The Committee note that except in 1964-65, in none of the years, the requirements intimated by the State Government were provided with the result that the progress of the project has been behind schedule and the target of providing irrigation from kharif, 1968 has not been achieved. The position has been particularly unsatisfactory in 1967-68, when against an amount of Rs. 13.25 crores recommended by the Working Group to be given as loan for the project, only a sum of Rs. 6.80 crores was provided. The result was that the work had to be stopped due to shortage of funds, leading to its abrupt discontinuance. While realising that the Central Government have its own financial limitations, the Committee cannot but reach the conclusion that there was lack of proper co-ordination between the Centre and the State concerned, and no timely intimation was given by the Central Government to the State authorities about its inability to provide funds to the extent required. As matters stood, the State Government concerned geared up its machinery to complete accelerated programme of work amounting to Rs. 18 crores, obviously on the assumption that funds to this extent would be forthcoming. The Committee cannot too strongly emphasise the need for maintaining an intimate rapport with the State authorities concerned in regard to allocation of funds for projects which have already been cleared by the Central Government for execution with Central assistance. They hope that the quantum of assistance to be provided to the State Government will be settled and intimated to them well in advance so as to assist them in proper phasing and planning the work programmes.

3.27. The Committee would like to stress that in view of the growing and imperative need for irrigation for the purpose of sustained agricultural development in the country it should be laid down as a national policy that all major irrigation projects like Gandak which would result in substantial irrigation benefits to the people should be executed at the optimum pace and once an accelerated programme for its execution is adopted, the same should not be allowed to suffer because of inadequate provision of funds. It is needless to say that delays in execution ultimately result in the estimates of the project going up and people being deprived of the irrigation benefits in time.

3.28. The Committee, therefore, recommend that in view of the fact that Gandak Project is in an advanced stage of completion and can give immediate irrigation benefits, top priority should be given in the Fourth Plan for its early and speedy completion. They would like that all efforts are made for completing the project during the Fourth Plan itself.

3.29. The Committee are glad to note that for the year 1968-69, the financial requirements of the Gandak Project are being met in full and as against the requirement of Rs. 21 crores, intimated by the State Governments, an amount of Rs. 20.50 crores is being provided. The Committee note that this also includes an amount of Rs. 8 crores which is being provided as special assistance. The Committee hope that this policy of providing adequate finance for the execution of the Project by providing special assistance if necessary, will be sustained in the next few years also so that the target of completing the project during Fourth Plan period may be achieved.

B. Terms of Loan and Rate of Interest

3.30. The following terms and conditions have been prescribed for the loans advanced by the Government of India to the State Governments of Bihar and Uttar Pradesh for financing the Gandak Project:

- (1) The loan will be re-payable in 20 annual equated instalments of principal and interest commencing from the 11th anniversary of payment of the loan.
- (2) During the first ten years interest charges will be payable annually. No moratorium will be admissible in respect of interest payments.
- (3) In case the payment of instalments of interest or of the principal and interest is not made by the due date, penal interest at the rate of 2½ per cent (two and a half per cent) in addition to the normal rate of interest shall be payable by the State Government.
- (4) The State Government will levy betterment fees and prescribe suitable water rates for the area benefited by the Gandak Project and the income thus derived will be utilised towards payment of interest charges and also the principal.
- (5) The rate of interest will be such as may be prescribed by the Government of India from time to time.

3.31. The rate of interest prescribed from year to year so far has been as follows:—

1963-64	.	.	.	5 1/4%
1964-65	.	.	.	5 1/4%
1965-66	.	.	.	5 3/4%
1966-67	.	.	.	5 3/4%
1967-68	.	.	.	5 3/4%
1968-69	.	.	.	5 3/4%

3.32. The rate of interest depends upon the borrowing rate of the Government of India for the year in which the loan is sanctioned and this rate may vary from time to time.

Terms and Conditions of earmarked Loan

3.33. The general pattern of earmarked loan assistance for major irrigation projects is that the assistance is in the form of 30 year loans and during the first 10 years interest alone is payable. Loans sanctioned prior to 10-6-1968 are repayable in 20 annual equated instalments of principal and interest commencing from the 11th anniversary of payment of each loan. With effect from the 10th June, 1968, the loans are repayable in equal instalments of principal together with interest due on the outstanding principal from time to time interest of equated instalments of both principal and interest. Also a rebate of $\frac{1}{2}$ per cent will be admissible for timely repayment of principal and/or interest. However, in the event of any default in the repayment of loan and/or interest thereon, interest at a rate higher than the normal rate by $2\frac{1}{2}$ per cent would be chargeable on all overdue instalments.

3.34. When asked during evidence if the terms and conditions of the loans were accepted by the State Governments, the representative of the Ministry of Irrigation and Power has stated in his evidence before the Committee "The loans are given according to an agreed pattern. The very fact that the State Governments have drawn the amount shows that they have accepted the terms and conditions." The representative of the Ministry of Finance has added that "For loans between the Centre and the States we have never followed the practice of written contractual documents. When they do not like the terms and think that more concessions should be given, they keep on writing to us."

3.35. It has been stated that the Gandak Project is one of the comparatively cheaper projects in India. Even after the enormous increase in the cost of the Project, the cost of the project is Rs. 404 only. The cost per acre of some of the major irrigation projects in the country shows that cost per acre in some projects is as high as Rs. 1200 acre.

3.36. The Committee note that Gandak Project is one of the comparatively cheaper projects and the cost per acre of the project compares favourably with most of the major irrigation projects in

the country. This further strengthens the view held by the Committee that the execution of the project should be undertaken at the optimum pace particularly when the project is likely to result in great benefits to the people of the area.

CHAPTER IV

COMPONENTS OF THE PROJECT

A. Barrage

4.1. The Gandak Project provides for the construction of a barrage across the river Gandak at Bhaisalotan (now renamed as Valmikinagar) about 2,500 ft. below the existing Tribeni Canal Head regulator. The salient features of the barrage are as follows:—

	Ft.
(i) Length of the Barrage	2,425
(ii) Crest level of weir R. L.	347
(iii) Crest level of undersluices RL	342
(iv) Average bed level	337
(v) Pond Level	362
(vi) H. F. L.	367
(vii) Afflux for ordinary maximum flood	2·20

4.2. In 1958, when the estimates of Gandak Project were sanctioned, the Barrage and appurtenant works was estimated to cost about Rs. 600 lakhs (excluding Rs. 15 lakhs for Navigation). In the revised estimates of 1965, the cost of the barrage was estimated at Rs. 1489.40 lakhs, an increase of Rs. 889.40 lakhs. In the latest revised estimates of the Gandak Project, the cost of the Barrage and appurtenant works including cost of Navigation lock has been estimated at Rs. 1786.00 lakhs.

4.3. The construction of the Gandak Barrage was entrusted to the National Projects Construction Corporation. The letter of intent was issued on 10th October, 1963. National Projects Construction Corporation started the work on the 4th December, 1963. According to the original programme, the Gandak Barrage was schemed to be completed by June, 1967. It has been stated that there was slow progress in the initial stages mainly on account of organisational deficiencies in the N.P.C.C. Unit in charge of the Works. There was also some difficulties regarding material, finance and machinery owing to which the N.P.C.C. could not do the work according to schedule. The progress of work in 1963-64 was stated to be exceedingly disappointing.

for which the explanation was that much time had been taken in the first year in making preliminary arrangements. An assurance was, however, given that after the organisation had been geared up, the progress was bound to be speedy and the barrage was to be completed by June, 1967. However, even during 1964-65 and 1965-66, the progress of work was not according to schedule. There were two main difficulties in N.P.C.C. achieving the target. The first was the behaviour of the river and natural calamities. The second was the difficulty in day to day working arising out of the work site being in a foreign country (Nepal). This was also delayed on account of a breach in the coffer dam caused by a very high flood in the very beginning of the Monsoon (1966). The N.P.C.C. asked for an extension upto June, 1968 which was granted.

4.4. When asked during their on-the-spot visit to the Gandak Project in September, 1967, if any fresh target had been laid down, the Committee was informed that "the target date now is the end of 1968. The work is expected to be completed by that time."

4.5. In his evidence before the Committee, the representative of the N.P.C.C. has stated before the Committee on 17th July, 1968 that "I am glad to say that the work has now been completed substantially and what remains to be done is very little. Immediately, the monsoon season is over, we will do it, in the monsoon season we cannot do any work. As soon as the water level comes down, we will do. We will complete it in all respects by December, 1968". When asked if there was any likelihood of the target date going beyond December, 1968 and if so whether the penalty clause would be enforced, the representative of the Ministry of Irrigation and Power has stated before the Committee "I am not sure it will be December or January, we should leave ample margin in so far as fixation of target date is concerned." The representative of the Government of Bihar has added "you have asked a hypothetical question. Much will depend upon what exactly happens in the next few months."

4.6. In a subsequent note furnished to the Committee in October, 1968, the Committee have been informed that "The bulk of work in the Barrage has now been completed by the N.P.C.C., and the remaining concreting work in the Barrage is expected to be completed by January, 1969. Completion of the bridge over the Barrage is, however, expected by March, 1969. No difficulty in adhering to these dates is now expected."

4.7. When asked during evidence if there was a certain delay due to design not being ready, the representative of the N.P.C.C. has

replied in the affirmative. When asked in how many cases it had happened, he has stated, "I have to confess that I have not got all the details of those small changes in design which were necessary. But one thing which I find is that in the initial stages there was some difficulty in getting it finalised partly because it had to be approved by the Central Water and Power Commission and therefore it took some time. Then the substitution of concrete cut off for part of the sheet piling also took some time and I think it was finalised in 1964-65 because we had to take a decision on that."

4.8. In a subsequent note furnished to the Committee in October, 1968 the Committee have been informed that "N.P.C.C. started the work on the 4th December, 1963. At the time of starting of the work, N.P.C.C. were given the detailed drawings on the basis of which the work for that particular season was to be done. The design of the barrage needed adjustment on the basis of the actual progress of work in the previous working season and hence, it was not possible to give complete details of all the work to be done in all the working seasons before commencement of work. Most of the detailed drawings for a particular season were furnished to N.P.C.C. before the commencement of the working season. Some designs had to be modified on account of construction difficulty but on no occasion, the absence of design or drawing was responsible for delay in work. There was increase in the quantum and scope of work. As for example, the concreting in the Barrage increased from 54 lakh cft. to about 72 lakh cft. and the reinforcement increased from about 4250 tonnes to about 12800 tonnes."

4.9. When asked what were the reasons for not giving complete details and designs before the start of the work, the Committee have been informed that "The detailed design of the Barrage for a particular working season has to be adjusted with due regard to the progress made in the previous working season, as for example, in the first working season, the progress made by N.P.C.C. necessitated an additional double pier and hence, the design, for the barrage in the 2nd working season had to be modified to suit the actual progress in the previous working season. It is not customary to complete the working details for the entire work to be done in several working seasons, at the very commencement for the work and the general practice for such large works is that the design for the next working season is made available shortly after the completion of the previous season's work."

4.10. The Committee note that the Gandak Project includes as one of its major components the construction of a barrage on the river Gandak at an estimated cost of nearly Rs. 1,780.96 lakhs. The Committee further note that when work was started in December, 1963, the barrage was scheduled to be completed by June, 1967. This target date was subsequently revised to June, 1968 which has further been revised to December, 1968. Work on the barrage is now expected to be completed by March, 1969. The Committee further note that during none of these years the progress of work on the barrage has been according to schedule.

4.11. The Committee cannot but reach the conclusion that there has been unusual delay in the construction of the barrage and although the target dates have repeatedly been extended, the same have not been adhered to. The Committee are of the opinion that any delay in the construction of the barrage would be largely responsible for delay in giving irrigation benefits to the people. It will also lead to a rise in the cost of the project. They therefore hope that such delays would be avoided in future and work on the barrage would be completed soon.

4.12. The Committee also observe from the statement of the representative of the National Projects Construction Corporation made before the Committee and from the material supplied to them that delay in the finalisation of the designs and increase in the scope of work have also been partly responsible for delay in the construction of barrage. The Committee recommend that whenever a major project is taken up for execution, all the details regarding design, scope of work etc. should be thoroughly gone into before actual work starts and no delay should be allowed to occur on account of change in design and scope of work.

B. Canals

4.13. The Gandak Project envisages the construction of a number of canals which would irrigate an area of about 28.45 lakh acres of land in Bihar, about 7,11,750 acres in Uttar Pradesh and an area of 1,43,900 acres in Nepal. The Project includes the construction of the following main canals:

(1) *Main Western Canal*: This canal is intended to command 14.08 lakh acres gross in the district of Saran and 8.31 lakh acres in Uttar Pradesh. A separate canal will also take off above the Western under-sluice to irrigate about 40,500 acres of land in Bhairva district of Western Nepal. The length of the main canal is 120 miles out of which first 11 miles will be in Nepal, next 66 miles in the district of

Gorakhpur and Deoria in Uttar Pradesh and the rest in the Saran district of Bihar. The portion of the Canal in Bihar is known as Saran Canal. The Nepal portion of the Western Canal is wholly for the benefit of Nepal.

4.14. The main Western Gandak Canal upto mile 13—4 and most of the Deoria Branch System are to be completed by June 1969, whereas the Main Western Gandak Canal from mile 13—4 to mile 81—5—295 is to be completed by June, 1971 and the balance work by 1972—73. It has been stated that the above targets can be realised subject to the availability of funds.

Saran Canal: The Main Western Canal after passing through Nepal and U.P. enters the Saran district of Bihar in the 82nd mile and then runs for 43 miles in Saran where it is known as the Saran Canal. Besides, 43 miles of the Main Saran Canal, the branch canal and distributaries cover 544 miles.

4.15. The entire Saran Canal System involves about 125 crores cft. of earth work and construction of about 800 structures. It has been stated by the representative of the Government of Bihar before the Study Group of the Estimates Committee in September, 1967 that some progress in the construction of the canal was made but in 1967 "work on this canal is practically stopped because of inadequacy of funds. If work is resumed as a result of fund being allotted to the extent of requirement, this canal system will be completed in all respects by 1972-73."

4.16. When asked during evidence the reasons for suspending work on this canal, the representative of the Ministry of Irrigation and Power has stated before the Committee "The work had to be stopped on the right bank site and slow down on Saran Canal because of inadequate funds. The Bihar Government started work on the Saran Canal. The first 11 miles of it is in Nepal, 11 to 80 in U.P. and from 80 onwards in Bihar. So Saran Canal starts from the 81st mile onwards. The Bihar Government started the Saran Canal in the hope that the U.P. Canal will be ready and water will be available simultaneously. But as things have turned out we could not provide funds to the extent required to complete this as this was the last from the point of view of priority. . . . On account of these factors it was decided that work on Saran Canal be suspended for 1966-67 and 1967-68. But it will be restarted after provision of funds in the Fourth Five Year Plan is finalised.

4.17. When asked if with the provision of additional funds, the position in respect of Saran Canal would become satisfactory, the representative of the Ministry of Irrigation and power has stated "Even now not for the Saran Canal They (Government of Bihar) should now synchronise with the U.P. programme and concentrate upon the first 56 miles that they have done instead of taking up any new work."

4.18. The Chief Engineer Gandak Project has stated during evidence that "The total estimated cost of the works in Saran district is about 22 crores. The original programme was that by 1970 U.P. Canal would be ready and water would be flowing into Saran district. To spend Rs. 22 crores in 5 years is a big task. So it was necessary to make a start and stagger the work so that by the time U.P. Canal is ready, water will flow in Saran district. But on account of limitation of funds, we could not keep our progress in Saran district. But whatever work has been done, we have taken care to see that the works are taken to such a level that infructuous expenditure is eliminated as far as possible. For this purpose, even in the last financial year, we had to provide a sum of Rs. 150 lakhs to see that the works are taken to a safe level. . . If we are able to get funds in the coming years, we would continue it". Questioned if any amount was going to be spent on this canal out of the funds now allotted, and if it would give any benefit, the representative of the Government of Bihar has stated "We are going to spend only Rs. 53 lakhs to keep them in shape. It would give them no benefit because the total expenditure on this canal is of the order of Rs. 22 crores out of which we have spent only Rs. 5 crores so that as soon as the U.P. canal is completed we start getting some benefit from the beginning". When asked when the U.P. Canal would be completed, the Chief Engineer, Gandak Project, U.P. has stated before the Committee "We have a schedule to complete the main canal by 1971-72". To a question if any coordination would be maintained between the Governments of Bihar and U.P. so that irrigation benefits could accrue at the earliest possible date, the representative of the Ministry of Irrigation and Power stated before the Committee, "We will take in hand straightway the co-ordination programme. The Government will have a meeting with the two Governments and look into the programme to see how, having regard to the availability of funds, we should co-ordinate in order to get the optimum results in the shortest possible time."

4.19 In a subsequent note furnished to the Committee regarding allocation of funds and present position regarding Saran Canal, the Committee have been informed that "Central assistance is given for

the project as a whole and not for any particular unit of work of the Project. The Saran Canal in only a unit of the Gandak Project like Barrage, Tirhut Canal, etc. Work on Saran Canal commenced on the 4th February, 1962. Out of a total of about 125 crores cft. of earthwork in the entire Saran Canal system, 49 crores cft. of earthwork has been done and out of about 800 approved structures, 43 have been completed and work on 62 structures is in progress. The Gandak Control Board was intimated about the reduction in the financial allocation in respect of the Saran Canal in its 9th meeting held on the 21st April, 1967."*

4.20. The Committee note that after completion, the Western Gandak Canal will provide irrigation benefits to more than 22 lakh acres of land in Bihar, U.P. and Nepal. The Committee further note that the Canal will serve those areas in Bihar and U.P. which are economically backward. The Committee are, however, unhappy to learn that progress of work on the canal is not according to schedule because of inadequacy of funds and work on the Saran Canal has totally been stopped. Even with the proposed additional funds for the Gandak Project as a whole during 1968-69 no work on the Saran Canal is expected to be undertaken.

4.21. The Committee fail to understand why work on the Saran Canal was undertaken in the beginning in the Bihar portion, if irrigation benefits were to accrue only after the completion of the U.P. portion of the Western Canal. The result of stoppage of work on the Saran Canal in Bihar has been that an amount of Rs. 5 crores has been blocked without any irrigation benefits for many years to come and the Government of Bihar is being required to spend lakhs of rupees every year for its upkeep. The Committee observe that there has not been proper phasing of the Saran Canal and its synchronisation with the U.P. portion of the canal. Apart from the fact that a large amount is going to be spent every year for the maintenance of the canal, no benefits would accrue to the cultivators who with the digging of the canal were expecting irrigation benefits at an early date.

4.22. The Committee strongly urge that phased programme of work for the early completion of the Western Gandak Canal including the Saran Canal should be prepared and necessary funds pro-

*The Committee have been informed at the time of factual verification that the programme of work for each season is approved by the Gandak Control Board on which both the State Government and the Central Government are represented. Work on the Saran Canal was undertaken after approval by the Board. The cost of the Saran Canal System is Rs. 19 crores, and unless this work was undertaken in the year 1966-67, it would not have been possible to synchronise its completion with the completion of U.P. portion of the Western Gandak Canal expected to be ready in 1969-70. Unfortunately, following the severe drought in Bihar in 1965 and 1966 the programme as drawn up could not be implemented. In a work of this magnitude canal digging has to start 3-4 years in advance of actual supply of irrigation waters.

vided so that as soon as the U.P. portion of the Canal is ready, irrigation benefits might accrue to the people of the area. Steps should also be taken to advance the target of completion of U.P. portion earlier than 1971-72 in view of the importance of the Canal. The Committee hope, as promised by the representative of the Ministry of Irrigation and Power, the Central Government would soon hold a meeting with the representatives of the State Governments of Bihar and U.P. and prepare a co-ordinated programme of work in this project.

4.23. *Main Eastern Canal*: The Main Eastern Canal with a length of 140 miles shall have a command area of 18.41 lakh acres in the districts of Champaran, Muzaffarpur and Darbhanga and 1.03 lakh acres in Parsa, Bara and Rautahat districts of Nepal. The Don Branch canal which is a branch of the Main Eastern Canal will be extended after its 60th mile, by another 50 miles and this section would be known as the Nepal Eastern Canal, and would provide irrigation to the aforesaid area in Nepal. The existing Tribeni Canal will also form a branch of the Main Eastern Canal which will be about 155 miles long and would be known as the Tirhut Canal.

4.24. As regards the Don Branch Canal, the system involves about 2000 lakh cft. of earthwork and 103 nos. of structures. The total estimated cost of the canal is Rs. 645.25 lakhs out of which work costing about Rs. 302.95 lakh has been completed upto 1967-68. However, work on the Don Branch canal has to be expedited since according to the Agreement with the Government of Nepal, work on the Nepal Eastern Canal has to be completed by March, 1970 (within one year of the completion of the barrage which is expected to be completed by March, 1969) and the Nepal Eastern Canal is a continuation of the Don Branch Canal.

4.25. As regards the Nepal Eastern Canal, as per original Gandak Agreement of 1959, Gross Command Area of 1,03,500 acres of land within the territory of Nepal was to be commanded by the Nepal Eastern Canal. The Don Canal in its first 60 miles was designed for irrigating land in India as well as to supply water to Nepal Eastern Canal. His Majesty's Government of Nepal have raised a point regarding the intensite of irrigation to be attained ultimately ,and actual survey has been done so that this issue can be resolved. According to the Project Report, 70 per cent of the Gross Command Area, has been assumed to be the net cultivable area, and 70 per cent of this area has been taken for kharif irrigation. In other words, about 50 per cent of the Gross Command Area has been assumed to be under kharif crop, but His Majesty's Government of Nepal have

suggested that this area should be much more. The matter was discussed with His Majesty's Government of Nepal.

4.26. The Gandak Coordination Committee at its meeting held on the 3rd April, 1968 recommended that the capacity of the Nepal Eastern Canal should be increased from 614 cusecs to 850 cusecs. This would provide irrigation to a gross command area of 1,03,500 acres and a stabilised irrigation in an additional area of 12,000 acres which is at present being irrigated by Talawe Irrigation Scheme in Nepal.

4.27. When asked why all these details were not worked out in the beginning of the Project, the Committee have been informed in a written note furnished in October, 1968 that "The project was finalised in 1961 on the basis of the information then available and was subject to negotiations between His Majesty's Government of Nepal and the Government of India in regard to schemes benefiting Nepal for the facilities extended by them for the construction of the Gandak Project. There has been some fresh thinking in Nepal on the additional benefits that should accrue to them from the Gandak Project and hence this question of revised alignments, increased capacity etc. have been raised. The entire question has to be discussed further in the Gandak Co-ordination Committee."

4.28. *Tirhut Canal*: This canal takes off from the left side of the barrage and runs through the districts of Champaran, Muzaffarpur and Darbhanga in its length of 168 miles. The length of the Branch Canals and distributaries is 1500 miles. It was originally planned that after the completion of the civil works of the barrage and installation of some gates on the left side, it would be possible to release water in the canal system from the Kharif season of 1968. To utilise this facility, it was proposed to complete the works in the Main Canal from R.D. 0 (Zero) to R.D. 374 along with the distribution system in this reach by May, 1968. The programme of year-wise creation of irrigation potential from this canal was framed as follows:

Year	Total (in lakh acres)
1968 Kharif	2.50
1969 Kharif	7.50
1970 Kharif	11.50
1971 Kharif	17.50

4.29. From a statement furnished to the Committee, it is observed that out of a total estimated work costing Rs. 3640.45 lakhs, work worth Rs. 1130.54 lakhs had been completed on this canal by 1967-68. The total number of miles completed is 350 in the Champaran district.

4.30. When asked if the work of providing irrigation was progressing according to schedule, the Chief Engineer, Gandak Project has stated before the Committee "According to the schedule, we were to have completed irrigation arrangements for an area of 2.5 lakh acres by Kharif of 1968. We have been able to do distribution system upto 5 cusecs for an area of 1.84 lakh acres. That means we have not been able to fulfil our target. It is because of financial limitations. In 1968-69, since we know the financial position right from the beginning, we will be spending Rs. 13 crores. So the Tirhut Canal would come upto R.D. 550, that is 100 miles from the Headworks." When asked to state the present position regarding supply of water for irrigation, the representative of the Government of Bihar has stated before the Committee in July, 1968, "The position is that we propose to give water to 1.8 lakh acres of land from September. The original intention was to give water to 2.5 lakh acres from 1st July. We were not able to adhere to that programme because in November, 1967 we had a meeting of the Control Board where we reviewed our financial position in relation to the programme for work to be taken in the ensuing working season and we came to the conclusion that there was no possibility whatsoever for us to have a programme of giving water to 2.5 lakh acres from 1st July. So a truncated programme was approved by the Control Board which we tried to execute. It is that truncated programme which is going to give water to 1.8 lakh acres of land from 1st September instead of 2.5 lakh acres from 1st July." The Chief Engineer, Gandak Project, Bihar has added "We have completed 68 structures in the last six months involving a total quantity of work of about 50 lakh cft. of concrete and 30 lakh cft of brickwork. This work we had undertaken in spite of the financial limitations. If the truncated amount of Rs. 11.14 crores would have been made available to us during the last financial year we would have completed these works."

4.31. The Committee regret to note that the progress of this important canal (Tirhut Canal) has been behind schedule and the programme of providing irrigation from the canal has not been realised mainly because of financial limitations. The Committee feel that the delay in the execution of the programme has deprived the people of districts Champaran, Muzaffarpur and Darbhanga, which are susceptible to drought, of irrigation benefits.

4.32. Now that the Central Government have provided funds to the extent required during 1968-69, the Committee hope that an attempt will be made to complete the remaining works of the canal as soon as possible so that irrigation benefits could start accruing at an early date. In view of the fact that the programme of year-wise creation of irrigation potential with effect from 1968 Kharif, which was drawn up earlier, is now out-of-date, the Committee would like to suggest that a revised programme for providing irrigation benefits from this canal should be drawn up and strictly adhered to.

3. Nepal Western Canal:

4.33. The Nepal Western Canal with a length of 18 miles has a Gross Command Area of 40,400 acres. The originally estimated cost of this canal was Rs. 38 lakhs which was revised to Rs. 83.08 lakhs in 1965. The cost has further been revised to Rs. 85.42 lakhs.

4.34. As regards the progress of work on the canal, the Committee have been informed that "a portion of land was made available by His Majesty's Government of Nepal and excavation work was commenced. But the work had to be suspended because His Majesty's Government of Nepal wanted some more area of land (25000 acres Gross Commanded Area) within Nepalese territory to be irrigated over and above the area of 40,000 acres Gross Command Area mentioned in the Agreement. For this, survey is being conducted by the Gandak Project Authorities". The Committee have been subsequently informed in October, 1968 that "the survey has been completed. The matter has to be pursued further at the next meeting of the Gandak Co-ordination Committee."

4.35. The Committee note that the survey work of the Nepal Western Canal has been completed and the matter will be pursued further at the next meeting of the Gandak Co-ordination Committee. They also note that the Canal would irrigate about 25,000 acres within the Nepal Territory over and above the area of 40,400 acres Gross Command Area mentioned in the Agreement. The Committee further note that according to the Agreement between His Majesty's Government of Nepal and the Government of India executed in 1964 this canal is to be completed, as far as possible, within one year of the completion of the barrage. Since the barrage is now expected to be completed by March, 1969, the Committee hope that early steps for the finalisation of the alignments of the canal and its execution would be taken.

Dhanaha and Ghorashan Branch Canals:

4.36. Two more extension schemes were subsequently added to the Gandak Project namely Dhanaha and Ghorasahan Branch Canals. A portion of the Dhanaha P.S. of Champaran district has

been rendered flood-free by construction of an embankment along the river Gandak on its right bank. This has since been included in the command of the Western Canal System. The command area of the new branch canal will be 60,000 acres. The Branch Canal is now estimated to cost Rs. 46 lakhs against the originally estimated of Rs. 44.81 lakhs. According to the information furnished by the Government of Bihar, the target date for the completion of the work on the project has been fixed as 1972-73 subject to availability of funds as programmed.

4.37. An area of about 1.67 lakh acres lying between the Command of Nepal Eastern Canal and that of the Tribeni Canal in the district of Champaran will be brought under irrigation through a branch canal named Ghorasahan Branch Canal. When sanctioned the cost of the canal was estimated at Rs. 372.45 lakhs which has now been revised to Rs. 378.50 lakhs.

4.38. In view of the constraint of resources, it was decided to suspend the work on this canal during 1967-68. The Working Group on Flood Control and Irrigation has suggested the following outlay for the Ghorasahan Canal beginning from 1968-69:

1968-69	Rs. 120 lakhs
1969-70	Rs. 120 lakhs
1970-71	Rs. 96.51 lakhs

4.39. The Committee note that Dhanaha and Ghorasahan Branch Canals were not included in the original projects and were later on sanctioned as extension schemes. The Committee, however, note that progress of these schemes have not been satisfactory. The Committee fail to understand why these canals could not be included in the framework of the original Gandak Project. However, since these Extension Schemes have been sanctioned, they should not be allowed to drag on and action should be taken to complete them.

C. Power House

4.40. A Power House with an installed capacity of 15,000 KW is being constructed on the ninth mile of the Main Western Canal in Nepal territory. This Power House will be handed over to His Majesty's Government of Nepal when the connected load from it in Nepal has developed to the firm potential of 10,000 KW at 60 per cent load factor. In order to facilitate the utilisation of power in Nepal, the Government of India have agreed to lay a transmission line from the Power House to the Bihar border near Valmikinagar (Bhaisalotan) and from Suganti to Raxaul in Bihar so that power

could be carried to a point from which His Majesty's Government of Nepal can easily take out transmission lines for use in their industrial area like Hithoura.

Cost of the Power House

4.41. The Nepal Power House was originally estimated to cost Rs. 282.30 lakhs. The cost has since been revised to Rs. 294.25 lakhs.

4.42. The civil works of Power House are being executed through the National Projects Construction Corporation. It was proposed to complete the civil works of the Power House by the end of July, 1968. Orders for the generating units were placed with M/S. Kawasaki of Japan by the Bihar State Electricity Board.

4.43. When asked to state the present position regarding the work on the Power House, the Committee have been informed in a written note that "Earthwork involving 19 lakh cft. has been completed. Out of a total quantity of 25,000 sq. ft. of sheet piling, about 13,000 sq. ft. has been done. Concreting has been taken up. Against an estimate of Rs. 80 lakhs for civil works, the total expenditure upto 30th June, 1968 is Rs. 22.31 lakhs. The work on the Power House is behind schedule. The Power House is expected to start functioning by June, 1970."

4.44. The Committee note that the work of the Nepal Power House has not been progressing according to schedule and the Power House is expected to start functioning only by June, 1970. The Committee hope that the Power House, which is expected to supply much-needed electricity to Nepal, would be completed within the target date now fixed.

CHAPTER V

EXECUTION AND PROGRESS OF WORK

A. Role of National Projects Construction Corporation Ltd.

5.1. As already stated in Chapter IV, the contract for the construction of Barrage was awarded to the National Projects Construction Corporation Ltd. The letter of intent was issued by the National Projects Construction Corporation on the 4th December 1963.

The year-wise performance of the National Projects Construction Corporation has been as follows:

		(In Lakh cft.)			
		Earth Work		Concreting	
		Programme	Progress	Programme	Progress
1964-65	. . .	150	115	30	12.91
1965-66	. . .	245	235	[42	30.25
1966-67	. . .	165	121	33.36	17.73
1967-68	. . .	66.54	75	31.56	25.75

5.3. When asked about the terms and conditions on which the work of the construction of the Barrage was entrusted to M/s. National Projects Construction Corporation, the Committee have been informed in a written note that "The River Valley Projects Department of the Government of Bihar awarded the work of construction of Gandak Barrage to M/s. National Projects Construction Corporation on the condition that they would start the work within 30 days of issue of notice to proceed with the work, and they were to complete the work in all respect by June, 1967. They were to furnish the department within 60 calendar days after the date of issue of notice to proceed, a complete programme of work, which should have provided for an orderly performance of the work and should have been in sufficient details. The programme of work was also subject to the approval of the Department. The Department was there to assist the National Projects Construction Corporation in the procurement of scarce materials and to help in

any manner warranted by the exigencies of the situation in order to avoid delays in performance of the work. However, the entire onus of procuring materials and performance of the work was on M/s. National Projects Construction Corporation and any failure of the Department to assist as above would not have entitled the National Projects Construction Corporation to put in a claim for compensation. However, request for suitable extension of time could be considered, in case the work could not be completed as scheduled, in spite of the best efforts of this organisation." Provision had been included in the agreement with the National Projects Construction Corporation about the financial transactions, inspection of work and action on slow progress of work.

5.4. When asked during evidence about the performance of the National Projects Construction Corporation, the representative of the Ministry of Irrigation & Power has stated before the Committee "The tenders for this barrage and these works were invited by the Chief Engineer, Bihar and there was one tenderer, the National Projects Construction Corporation. That shows that it was very difficult work and others did not want to go there at all. The National Projects Construction Corporation which was specially set up for this purpose volunteered to do that as also the Farakka Barrage. There being a single tenderer, they (Bihar Government) naturally had to go into the terms; they could not accept the terms as they were. A Committee was set up and they went into the rates of the Barrage and so on. Ultimately the terms and conditions were finalised. Then a letter of intent was issued on the 10th October, 1963. They started work on the 4th December, 1963. Then in July, 1964, discussions were held between the General Manager and the Chief Engineer, N.P.C.C. and a broad programme was worked out. In the light of that targets were laid down". When asked if any extension was granted and if so upto what date and whether the Government of Bihar was satisfied about the reasons for extension, the representative of the Ministry has stated "There was the overall programme and a year-wise programme was laid down. The final target date is over and no compensation has been realised because they have been given extension having regard to the various special features and some special difficulties that they had at various stages. He has added that the period of extension was specified upto June, 1968 and that the Government of Bihar were satisfied that the reasons advanced by them, were reasonable. As regards performance, the quantum of work had gone up substantially from 50 lakh cubic feet to 72 lakh cubic feet. Then the reinforcements and the earth-work also had increased." When asked if there was any lacuna in the organisational set-up of the N.P.C.C. which accounted

for the delay, the representative of the Ministry of Irrigation and Power has stated "Some organisational difficulty was there in the beginning. Actually the conditions in that area were bad; the communications were also bad. Nobody realised how difficult it was going to be. It took sometime to set up the organisation and even to persuade the labour to go there. I think there must have been some deficiencies on the side of organisation also. While this was on one side, the other contributory factors which were taken into account were that the quantum of work went up by 50 per cent. Therefore, the whole time schedule proved to be somewhat unrealistic."

5.5. The representative of the National Projects Construction Corporation has added that "Coming to the slow progress of work, the tenders were called for in May, 1963. We expected the whole thing to be completed in about a month or two months' time. But what had been issued was a mere letter of intent in December and many of the essential things were unsettled. These were concluded only in April, 1964. In spite of that a start was made in December and whatever was humanly possible was done. So far as 1963-64 is concerned, I personally consider that Corporation had made all out efforts to keep to the targets and gone, even out of the way in incurring considerable extra expenditure in this attempt which no other contractor would have done.... The real deficiency was in 1964-65 because in 1964-65 the Corporation failed to some extent for certain reasons. In 1964-65, the target given to the Corporation was 14 bays. In a river-bed there are so many conditions, which are uncertain and it is not easy to visualise. 14 bays in my opinion was the thing which the Corporation ought not to have agreed to, but still in good faith, it agreed to it.... Various bottlenecks were there.... I do not want to go into this greater detail. There were a lot of difficulties in the Corporation also. We had to get and post competent mechanical engineers. We were to do the work in three shifts which could not be arranged; the best that could be arranged was only two shifts". When asked if at any time, it was pointed out by the N.P.C.C. that the target date was not realistic and had to be revised, he started "As contractor I have come to realise very well that we have no choice in the matter. Generally speaking, the Department usually puts a condition that any variation in the tender clause is liable to be summarily rejected. In this particular case we thought that we had four working seasons. At that time we did not apprehend a certain difficulty namely the peculiar soil condition in the riverbed which made the piledoing work slow and very difficult. The soil in the riverbed was sandmixed with boulders. There was a tremendous

amount of work to be done. . . . So as far as the Corporation is concerned, it left no stone unturned. It did its best, but these bottlenecks were there which were beyond their control. . . . we had to improve our house also. There was some deficiency, I do admit it. It had to be improved. I am glad to say that the work has now been completed substantially and what remains to be done is very little."

5.6. Questioned if at the time of awarding the contract was the Government satisfied that the N.P.C.C. had the men, machinery and equipment to cope up with this type of work, the representative of the Ministry of Irrigation and Power has stated before the Committee "The N.P.C.C. had the experience of that type of work in the Kosi Barrage which was equally difficult and they were able to do it. Similarly, they had experience in the Hasdeo barrage in Madhya Pradesh. In view of this, I presume they (Government of Bihar) were satisfied that they would be able to do the work. . . . If I may speak on a personal tone, we must realise that but for the N.P.C.C. the schedule of rates would have been very high and we would have found it impossible to get contractors and they would have charged fantastic rates. In the case of the Farakka Barrage also, it was also after the N.P.C.C. came in, that others could be brought there. Here they have done pioneering work which should be recognised though it is true that there may have been some delays and so on."

5.7. The Committee note that the performance of the National Projects Construction Corporation, which have been entrusted with the construction of the Gandak Barrage has not been according to schedule in the initial stages and that organisational deficiency in the National Projects Construction Corporation was partly responsible for the delay. They also note that necessary improvement has been effected in the organisation and work has been completed substantially and what remains to be done is very little.

5.8. The Committee observe from the statement of the representative of the National Projects Constitution Corporation, that the Corporation had agreed to the targets although they realised that they were not likely to be fulfilled. The Committee feel that the National Projects Construction Corporation before finally agreeing to the target dates fixed/proposed for completion of projects to be undertaken by them, should have pointed out the technical or physical difficulties involved.

5.9. The Committee regret to note that even though the letter of intent was issued to the Corporation in October, 1963, many of the essential points were settled by the Government only in April, 1964. In order to enable the contractors to adhere to time-targets, such delays should not occur.

B. Award of Contract to Shri M. S. Ramaiah

5.10. One of the contractors in the Gandak Project is Shri M. S. Ramaiah. It has been alleged that the contractor had been making false claims against the Gandak Project for work not actually done. The Committee desired to have detailed notes about the performance of this firm of contractors. In a written note furnished to the Committee by the Ministry it has been stated that Shri M. S. Ramaiah was awarded the following works in the Gandak Project in the year 1965:—

	Rupees lakhs
(i) Prestressed concrete bridges on Gandak Project Canals	105.75
(ii) Cross Drainage works on Tirhut Canals.	273.00
(iii) Excavation of Main Eastern Canal in Nepal below Power House (RD 47 to RD 62.6)	83.00
	461.75

5.11. Regarding the performance of Shri M. S. Ramaiah in all the three works, the Committee have been informed in a written note as follows:—

(i) Prestressed Bridges on Gandak Canal:

Shri M. S. Ramaiah was allotted the work of construction of 38 bridges on Tirhut Canal and 17 on Saran Canal. In terms of the tender notices, the completion date of the bridges was March, 1967. Although Shri Ramaiah started works on some bridges on Tirhut Canal, he had not made any arrangement for starting the work on bridges of Saran Canal. In order to give the contractor an opportunity to concentrate on other works of Gandak Project allotted to him, he was asked by the River Valley Projects Department of Bihar as to

whether he would surrender the entire work of 17 bridges in Saran Canal. The contractor agreed that these works might be withdrawn from him. Accordingly the work of construction of 17 bridges of Saran Canal system was withdrawn from him.

5.12. A further review of the progress was made and it was found that the total value of works done upto 25th May, 1967 on bridges was hardly 29 per cent of the tendered value. Besides the actual cost of execution of the work, the total expenditure included the amount of secured advances etc. Therefore, the physical progress was found to be much below expectation. Accordingly, the contractor was asked to show cause why the work of construction of prestressed bridges on Gandak Canals should not be withdrawn from him. The contractor's reply was found to be unsatisfactory and therefore all the remaining works of bridges were withdrawn from him in July, 1967.

(ii) Cross Drainage works on Tirhut Canal:

5.13. In all, 28 Cross Drainage works on Tirhut Canal had been allotted to Shri M. S. Ramaiah. The completion date of these works in terms of the notice inviting tender was June, 1967. The work order was issued on 25th October, 1965. On account of delay in award of contract and some serious set-back in progress in initial stage, the date of completion of these works extended to the 31st March, 1968. The review of the performance of Shri M. S. Ramaiah on 25th August, 1967 revealed that the over-all monetary value of progress was hardly 19 per cent. Besides the actual cost of execution of work, the expenditure included the amount granted as secured advances etc. Therefore, the physical progress was less than 19 per cent. It was evident that with this rate of progress the contractor would not be able to complete the works in time. The contractor was served with several show cause notices earlier and few structures were also withdrawn from him when it was found that his performance was not improving in spite of the show cause notices, Shri Ramaiah failed to show any satisfactory progress. When it was evident that he would not be able to complete the work in time, the remaining works were withdrawn from him in September, 1967.

(iii) Excavation of Main Western Canal in Nepal:

5.14. Work order was issued to Shri M. S. Ramaiah on 28th May, 1965. However, the land on which the canal was to be excavated

could not be made available since the Government of Nepal had to acquire it and make it over to the Project Administration. The possession of the land could be secured only on the 12th February, 1966. The contractor then represented to the Chief Engineer that during the short period of the working season of 1965-66 left at his disposal, it would not be possible for him to make any appreciable progress in the work. The contractor's representations were considered in a meeting held with the Chief Engineer and Financial Adviser on 8th May, 1966. It was found that although Shri Ramaiah was allowed advances of about Rs. 6.23 lakhs for starting this work which involved excavation of nearly 8.25 crores cft. of earth-work and the possession of land had been given to him in February, 1966, no work was started in the canal. This was viewed with concern. It was, however, agreed that Shri M. S. Ramaiah would start the work from early next working season and complete the same within two working seasons from the date the site was made available to him.

5.15. In the meeting held on 8th May, 1966 between Shri Ramaiah and the Department, Shri Ramaiah had stated that he would start the work early in the working season 1966-67 and would complete the same within two working seasons from the date the site was made available to him. He was requested to submit a programme for execution of the work latest by 15th August, 1966, but no programme was submitted by him till the 25th September, 1966. In the programme submitted by him on 25th September, 1966, he had proposed to do nearly 40 per cent work in the first season and balance 60 per cent in the next season. It was expected that with the advance already granted to him and much of the time having passed since the work order was issued, if his intention was to complete the work by due date, the programme should have been to complete the maximum quantity of work to the extent of at least 66 per cent in the first working season. Even the uncertain programme submitted by him was hedged in with a condition for modification of the work order regarding the mode of payment and other conditions.

5.16. As this work was of vital importance involving provision or irrigation facility in Uttar Pradesh and Bihar, the department could not depend on the uncertain programme with so many new special conditions submitted by him. Therefore, the entire work was withdrawn from him in November, 1966.

5.17. The Committee have subsequently been informed by the Ministry of Irrigation and Power that some arbitration proceedings have been initiated and there are also some court cases with regard to these contracts.

5.18. From the material supplied by the Ministry, the Committee observe that Shri M. S. Ramaiah was awarded contracts for the construction of three works but in none of these the progress was according to schedule and all the three works were withdrawn from him. Since there is litigation pending in the Court between Shri Ramalah and the Government of Bihar, the Committee would not like to make any comments about the merits of the case. They would however like to emphasise that before awarding contracts to any individual contractors or firms, their antecedents, past performance, technical and financial capacity to do the job, etc. should be fully investigated so that there may not be any hold up of work resulting in avoidable losses due to delay in execution. The Committee would like to be apprised of the final outcome of the arbitration proceedings and the court cases relating to this matter.

C. Execution of work by Contractors *vis-a-vis* Departmentally and utilisation of machinery

5.19. The Committee have been informed that the bulk of work in the Gandak Project is being done through contractors except small items which are being done departmentally. When asked during evidence if it had been suggested that the Department should get suitable work executed departmentally as had been done in the case of other river valley projects, the representative of the Ministry of Irrigation & Power has stated before the Committee, "Excepting for Bhakra-Nangal and Beas and particularly Nagarjunasagar, the rest of the works are by and large done through contractors. It is a simpler system because then the officials do not have to undertake the onerous responsibility of engaging thousands of muster roll labour and keeping their account. It also avoids problems like lay off and retrenchment later. By and large this system of construction through contractors has worked well. It has also one other advantage in that you get competitive rates and you are in a position to feel sure that by and large the thing is all right. Departmental construction lays very onerous responsibility on the executive officers to ensure that it is executed as efficiently as possible. . . . So work through contractors we thought was most suitable though we have been in favour of some jobs being done departmentally partly to ensure that we are not all the time at the mercy of the contractor and that in times of difficulty we can take up emergent works and also be able to deal with situations as they arise". When asked how much percentage of work in Nagarjunasagar was done departmentally, the Chairman

of the Central Water and Power Commission has stated before the Committee "80 per cent of the labour will be departmental in the dams".

5.20. When asked about his experience in getting work executed departmentally *vis-a-vis* through contractors, the Chief Engineer, Gandak Project has stated before the Committee, "During the last working season we undertook 262 structures out of which 30 bridges are fairly major works and 232 structures in the distribution system on piece rate basis. This we have categorised as semi-departmental because we have engaged piece rate works for different components of the work and have supplied the material ourselves. We have done all the supervision ourselves and a large number of piece rate works have been engaged. . . . Our experience is that on bigger works where large quantum of machinery is required to be employed it will be better to engage contractors who have got the resources in their possession. For smaller works where equipment and machinery is not required, such piece rate works will be all right".

5.21. When asked if much of the machinery will be lying idle which previously was used in Kosi, the Chief Engineer, Gandak Project has stated, "No, Sir. Our equipment has been fully utilised during the outgoing working season about which I can say from my own experience. We have let out these machineries on hire to National Projects Construction Corporation and they have fully utilised the machines in the work of the barrage. Secondly, our earth-moving equipment has been fully utilised in the canals. In the main eastern Canal, i.e. the Tirhut Canal, we have done earth-work 0 to 6 R.D. wholly by our departmental machines. On the main western Canal we have done 2 miles' length of earthwork. In the Don Canal we are doing 5 miles with departmental machines. All this earth-work is being done departmentally by machines. So none of the machines has been kept idle".

5.22. When asked to state the position regarding the utilisation of machinery so far purchased in Gandak Project and the percentage of machinery remaining idle, the Committee have been informed in a written note as follows:—

U.P. Portion

- (a) Most of the machines as provided in 1966 Project have been procured either by transfer from other projects in the State or by purchase from suppliers. These machines are

being used on the Project according to necessity. These will remain in the Project till its completion. Arrangements for transferring these machines to other projects will be made when the project reaches an advanced stage of completion.

- (b) Some of the machines obtained on transfer from other projects have almost completed their economical life. Percentage of sickness for such equipment is rather high. Other equipment is used according to requirement. In this connection it may also be stated that due to high spring level the working season is only 6 months in a year.

Bihar Portion

- (a) The following are the details of earthmoving equipment that is with the department of Gandak Project:

Excavation Units.

- | | | |
|--|-------|--------|
| 1. Japanese P & H Dragline 955A, 2½ cuyd | . . . | No. 1 |
| 2. Tata P & H 955 Model 2½ cuyd | . . . | Nos. 5 |
| 3. 54 R. B. Dragline 2½ cuyd | . . . | Nos. 2 |

Dozing Unit.

- | | | |
|--------------------------------|-------|--------|
| 1. Komatsu Dozer, D-120-6 | . . . | Nos. 3 |
| 2. Komatsu Dozer, D-50-6 | . . . | Nos. 4 |
| 3. Eimco Dozer 106C, Model | . . . | Nos. 3 |
| 4. Letourneau Dozer, 'C' Model | . . . | No. 1 |
| 5. Catterpillar D-8 Dozer | . . . | No. 1 |
| 6. Allischalmer, HD-16 Dozer | . . . | No. 1 |

Dumping Units

- | | | |
|-----------------------------|-------|---------|
| 1. Letournea Rear dumper | . . . | Nos. 3 |
| 2. Letourneau Bottom dumper | . . . | Nos. 8 |
| 3. Euclid Bottom Dumper | . . . | Nos. 5 |
| 4. Mogurt Dumper | . . . | Nos. 10 |

Crawler Type Tractors.

- | | | |
|------------------|-------|--------|
| 1. HD-9 Tractor | . . . | No. 1 |
| 2. HD-6 Tractor | . . . | Nos. 2 |
| 3. HD-20 Tractor | . . . | No. 1 |

Motor Grader

- | | | |
|----------------------------------|-------|-------|
| 1. Catterpillar Motor Grader 112 | . . . | No. 1 |
| 2. Allischalmer Motor Grader | . . . | No. 1 |

Scrappers

- | | | |
|-------------------------|-------|--------|
| 1. Letourneau Scrappers | . . . | Nos. 3 |
|-------------------------|-------|--------|

5.23. The above departmental equipments have been utilised for the construction of the Left guide bund. Excavation of Main Western Canal from 0 to 8 R.D., Construction of Coffor Dam in the Barrage.

5.24. The following equipments were procured from other projects like Kosi and Sone Barrage Projects:

1. 54 R. B. Dragline $2\frac{1}{2}$ cuyd transferred from Kosi to Sone and then to Gandak Nos. 2
2. *Dozing Unit*
 - (a) Letorneau Dozer from Kosi No. 1
 - (b) Catterpillar D-8 Dozer from U.P. Government No. 1
 - (c) Allischalmer HD-16 Dozer from Kosi No. 1
3. *Dumping Units.*
 - (a) Letourneau Rear Dumper from Kosi Nos. 3
 - (b) Letournea Bottom Dumper Nos. 8
4 Nos. from Kosi and
4 Nos. from Sone
 - (c) Euclid Bottom Dumper from Some Nos. 5
4. *Crawler Type Tractors.*
 - (a) HD-9 Tractor from Kosi No. 1
 - (b) HD-6 Tractor from Kosi Nos. 2
 - (c) HD-20 Tractors from Sone No. 1
5. *Motor Grader.*
 - (a) Catterpillar Type Motor Grader 102 from Kosi No. 1
 - (b) Allischalmer Motor Grader from D. V. C. No. 1
 - (c) Letourneau Scraper from Kosi to Sone and then to Gandak Nos. 3

These machines are being used on:—

- (1) Construction of by-pass channel in the Nepal Power House.
- (2) Construction of Main Eastern Canal in priority zone from 0 to 8.5 R.D.
- (3) Excavation of Don Canal from 0 to 18 R.D. and also from 20 R.D. to 48 R.D.

Though these machines had outlived their useful life, before being transferred to the Gandak Project (having been used in the Sone and Kosi Projects) these machines are being utilised to the fullest extent with proper maintenance and timely repairs.

5.25. As regards the machines remaining idle, the Committee have been informed that some equipment remains idle on account of repairs to them which at times get delayed due to non-availability of spare parts. Efforts are made to use the equipment fully during the working season after necessary repairs are carried out during the monsoon months. No machinery remain idle for want of work.

5.26. When asked about the amount of foreign exchange spent so far on the import of machinery and spare parts and if any difficulty had been experienced by the Government of Bihar and Uttar Pradesh in getting foreign exchange for the import of machinery and spare parts, the Committee have been informed that "The approximate value of the foreign exchange spent on the purchase of new machines and spares for Gandak Project is Rs. 44,44,000. The offers obtained against tenders for machinery etc. are examined. Preference is always given to suitable indigenous offers. When suitable indigenous offers are not available, there is no other option but to import machinery from outside. In such cases the suitable imported offer is selected and actual users import licence application is sent to Central Water and Power Commission, who scrutinises the offer and after getting clearance from Director General Technical Development from indigenous angle, forward the case to the Ministry of Irrigation and Power with due recommendation. The Ministry of Irrigation and Power, after sanctioning the foreign exchange in consultation with the Ministry of Finance, wherever necessary, forward the case to Chief Controller of Imports and Exports to issue the import licence. The foreign exchange demand for Gandak Project was first sent to Central Water and Power Commission on 13.5.61. The sanction of foreign exchange was delayed due to queries and clarifications. An *ad hoc* allotment of foreign exchange was sanctioned on 27-7-62. But for this initial delay, there was not much difficulty in getting foreign exchange sanction". When asked what has been the time-lag between the application and release of foreign exchange, the Committee have been informed in a written note that, "The time-lag between application and release of foreign exchange has generally been of the order of 2—4 months, there have been a few cases of a longer time-lag and also a number of cases in which the release took less than a month.

5.27. The Committee note that most of the work of Gandak Project is being executed through contractors and only some small items of work are being done departmentally. The Committee note that the experience of the Government is that "on bigger works where large quantum of machinery is required to be employed, it will be better to engage contractors who have got the resources in their possession."

5.28. The Committee are glad to be told that the machinery procured by the Government is fully utilised and there is no machinery lying idle for want of work. The Committee, however, note that in some cases there has been a delay of more than a year in the release of foreign exchange after the receipt of applications, particularly in 1965-66. The Committee hope that such delays will be avoided in future.

5.29. The Committee also note that the repairs to equipment sometimes get delayed due to non-availability of spare parts. They would like suitable remedial steps to be taken in the matter.

D. Controversy regarding Lining of Uttar Pradesh Western Gandak Canal

5.30. In Uttar Pradesh Project estimates of 1959, there was a provision for lining the entire canal upto UP-Bihar boundary i.e. mile 81.5. Subsequently in the modified project estimate of September, 1961, lining was limited to mile 55.5 only. However, the Chief Engineer, Uttar Pradesh took the stand, while submitting his comments on the agenda notes of the First Technical Committee meeting of Gandak Control Board held on 31-1-1962 that lining may be required in the entire reach of canal in Uttar Pradesh i.e. upto mile 81.50. The Project Engineer of Bihar did not consider the lining in the Main Western Canal in Uttar Pradesh necessary but the UP Government was keen about it to prevent water-logging. The matter was considered by the Control Board and ultimately a decision in favour of lining was taken.

5.31. An eminent Engineer in his Memorandum submitted to the Committee has stated "Except lining of the main Western Canal upto the Power House (about 11 miles) in Nepal, the Bihar Project did not provide any lining of the canal. The Uttar Pradesh Project provided a lining over a length of about 80 miles, in the main western canal flowing through its territory, for fear of water-logging in this area. This will cost the Project about 5 to 6 crores of rupees. It will also delay completion of the Project and extension of irrigation in Saran district of Bihar. Technical opinion differed on the utility of lining for preventing water-logging, on account of which Kosi Canals also were not lined".

5.32. When asked during evidence about the extra cost involved in the lining of the canal and the reasons for the controversy, the representative of the Ministry of Irrigation and Power has stated: "The original project report of Uttar Pradesh did contain a proposal to line the canal from mile 11 to 54. They had a provision of Rs. 368.61 lakhs made in the provisional project estimate. Later on in the revised estimate a proposal was made to extend the lining

from mile 54 to mile 80 also, that is, upto the Bihar border. The total cost of the revised estimate for lining was 6.67 crores. The additional cost was roughly Rs. 298.5 lakhs. There are two elements, 11 to 54 and 54 to 80. The latter was not in the original estimate but has been included now. Though initially Uttar Pradesh had made a proposal in their project estimate, as was approved by us, later the Bihar Government raised the point that this was not necessary, because they had to share part of the cost. The matter went to a Technical Committee appointed by the Control Board, and it was ultimately decided that Uttar Pradesh should be allowed to go ahead with the lining from miles 11 to 80".

5.33. When asked if the matter was referred to the Central Water and Power Commission for their technical opinion, the Committee have been informed in a written note that "The controversy between Uttar Pradesh and Bihar on the necessity or otherwise of lining the Western Gandak Canal in Uttar Pradesh was not referred to the Central Water and Power Commission as such. The question was referred by the Gandak Control Board to its own Technical Committee on which the Central Water and Power Commission was represented by the then Member (Design and Research). The necessity for lining of the entire reach of the Main Western Gandak Canal in Uttar Pradesh was accepted by the Gandak Control Board on the recommendation of the Technical Committee comprising two Chief Engineers one each from Uttar Pradesh and Bihar, and Member (Design and Research) of the Central Water and Power Commission."

5.34. Asked about the various dates relating to the controversy about the lining of the canal, and if there was any hold-up of work on account of this controversy, the Committee have been informed in a written note that "A controversy regarding the lining of the entire reach of the Main Western Gandak Canal in Uttar Pradesh was first raised in the Second Technical Committee meeting of Gandak Control Board held at Patna on the 16th May, 1962. The third meeting of the Gandak Control Board held at Lucknow on the 8th September, 1962 decided to line the canal upto mile 55.5. The tenth Technical Committee meeting held at New Delhi on the 29th and 30th April, 1965 recommended the lining for the rest of the reach in Uttar Pradesh i.e. from mile 55.5 to 81.5. There was no hold-up on account of the delay in taking a final decision since lining upto mile 55.5 had already been decided as early as in September, 1962 and work upto this mileage could go on while the question to line the remaining length of the canal was under discussion".

5.35. However, in the proceedings of the Eighth Meeting of the Gandak Control Board held at Patna on the 6th August, 1966, it has

been stated that "In view of the up-to-date progress in the construction of the Main Western Canal in Uttar Pradesh in the past, a doubt was raised whether the work could be completed by June, 1969 as programmed. Shri Mitra (Engineer-in-Chief, Irrigation Department, Uttar Pradesh) explained that delay in the execution of the work in the past was due to delay in taking a decision on the question of lining the canal. After a decision had been taken on that issue, there has been no such delay". Again in the Agenda Notes & Explanatory Notes prepared for the Tenth Meeting of the Gandak Control Board held at Lucknow on the 22nd November, 1967, it has been stated that "So far Main Western Gandak Canal was to be lined in Uttar Pradesh from mile 11.6 to mile 55.4 only and accordingly the estimate prepared in 1961 and approved by Gandak Control Board and sanctioned by Uttar Pradesh Government contained provision for lining in this reach alone. However, the question of providing lining in the remaining reach of Uttar Pradesh remained under discussion and it was decided that no work (even the earthwork) should be done in this reach till the final decision was taken. It was only in June, 1965 (in 6th meeting of Gandak Control Board held at Mussorie) that it was decided to line the remaining portion of Main Western Gandak Canal in Uttar Pradesh."

5.36. The Committee note that Uttar Pradesh Project estimate of 1959 contained a provision for lining of the Western Uttar Pradesh Gandak Canal upto Bihar. But in the revised estimate of 1961, lining was limited to 55.5 miles only. The Committee further note that the Chief Engineer, Uttar Pradesh raised the question of lining of the entire Uttar Pradesh Canal in 1962 and it was only in June, 1965 (in 6th meeting of Gandak Control Board) that a decision to line the remaining portion of main Western Canal was taken. This decision has entailed an extra expenditure of Rs. 298.5 lakhs and there were also differences in technical opinion regarding the utility of the lining of the canal.

5.37. The Committee observe that it has taken nearly 3½ years to take a final decision on the controversy regarding the lining of the entire reach of the Western Uttar Pradesh Gandak Canal. Although it has been stated by the Government that there was no delay in the execution of work on account of delay in taking a decision on the controversy, the Committee note from the proceedings and Agenda papers of the sittings of the Gandak Control Board that the controversy has contributed to the delay in the execution of work relating to the lining of the canal. The Committee would urge that decisions on matters of such vital importance should be taken by the authorities in the quickest possible time so that any chances of delay in execution could be obviated.

E. Breaches in Chhitauni Bund

5.38. Prior to 1954, there was no flood protection work on the right side of the Gandak in the U.P. territory. The north-eastern Railway embankment from Khadda to Chhitaunighat used to provide some protection. The Gandak river below Genughat used to flow more or less parallel to the Railway Embankment about 5 to 6 miles away from it. The entire area lying between River Gandak and the Railway embankment to the extent of 30,000 acres used to be flooded annually and, therefore, only Rabi cultivation was done. In addition, the rural population living in the area was put to considerable hardship during the flood season.

5.39. Since 1954, measures have been taken to protect the area on the right bank from the spills of the Gandak river. In 1954, the left bank of the Naraini Canal in a length of 8 miles was constructed as a flood bank. In the same year, the river showed a tendency to develop a spill near Gantewa which, if allowed to continue, would have endangered the safety of the railway line, as also the area of about 1.25 lakh acres behind it. In order to prevent such occurrence, the Chhitauni Bund was constructed in a length of 14.5 miles, during the period 1954 to 1957.

5.40. In 1961, there were high floods in Gandak which caused appreciable spills into the little Gandak through the Dhoba nallah. Further, in 1963, the Simiri Channel, which had been defunct for a number of years, suddenly developed. These developments had to be controlled for the safety of the Western Gandak Canal and also of the areas in U.P. and Nepal territory. Therefore, river training works in Gap 'A' and Gap 'B' and the Nepal bund were constructed. These works protect the Western Gandak Canal from its head upto mile 27 where it crosses north-eastern railway line. The Nepal Bund and the Naraini Bund have given adequate protection. The Chhitauni Bund, has, however, come under severe attack of the river even since its construction. When it was first constructed, the river course was a mile away from the embankment, but since its construction, the river has shown continuous tendency to move westwards towards the embankment. In order to save the bund and maintain the planned protection, retirement of the bund and river training works to divert the river away from the bank were taken up from time to time.

5.41. In spite of the protective works undertaken, there were breaches in the bund in 1958, 1963, 1965, 1966 and 1967. The bund exists at present upto mile 10/0, lower down, it has been mostly washed away.

5.42. Breaches in the various years occurred at the following locations:

1958 Between mile 10 and 11

1963 Between mile 10 and 11 and mile 13/1 and 13/3

1965 Between mile 10 and 11

1966 At mile 3/0 and between mile 3|2 and 4|2

1967 Between mile 2|6 and 3|0

5.44. In 1966, the Chhitauni bund between mile 3/0 and mile 4/2 ches that occurred in 1958, 1963, and 1965 did not cause any significant damage.

5.44. In 1966, the Chhitauni bund between mile 3|0 and mile 4|2 came under heavy attack of the river. The flood waters caused a breach in the bund at mile 3/0 in a width of 1600 ft. and a large portion of the flood flows passed through this breach. There was another breach between mile 3/2 and 4/2. A spill channel developed at this breach site. The flows through the spill breached at left bank of the Gandak Canal under construction between mile 25/0 and mile 27/0. The spill water also overtopped the north-eastern railway line between Khadda and Siswa Bazar-stations, necessitating the construction of a pile bridge for maintaining rail traffic. Due to the spill there was active flow below Malahia in a length of 1 mile requiring heavy expenditure on emergent protection measures for saving the railway track. The breach affected an area of 21,000 acres of which 10,000 acres were under crops. The total damage was estimated at Rs. 80 lakhs.

5.45. In 1967, due to the timely action taken by the Engineers at the site in constructing a retired bund, the damage extended over an area of only 1,000 acres.

5.46. In 1964, some Members of Parliament brought to the notice of the Union Government the need for providing adequate protection to the areas served by the Chhitauni Bund. The Government of India, thereupon appointed a Committee in 1965, called the Chhitauni Bund Committee, consisting of officers of the State Governments of Bihar and U.P. and Central Water and Power Commission and Railways. The terms of reference to this Committee were:

- (i) to review the flood problem of the river Great Gandak with particular reference to the reach on the right bank downstream of the trijunction of the Nepal-U.P.-Bihar border up to Chhitauni Ghat.

- (ii) to make an assessment of the protection afforded in the past by the Chhitauni Bund together with the various protection works constructed on the right bank of the river by the Governments of U.P. and Bihar.
- (iii) to study the causes responsible for inadequate protection in the past by this embankment during the flood season of certain years.
- (iv) to lay down standards to which the bund and its various protective works should be built so as to be effective and secure and to make recommendations for improvement in the system for achieving these objects.

5.47. The Committee have been informed in a written note that the Chhitauni Bund Committee have completed their work. The draft report is being finalised. This Committee have made a detailed review of the problem in the areas served by the Chhitauni bund, the various protection measures taken up since 1954 in Nepal and U.P. territory and their behaviour in the subsequent years. They have observed that the piecemeal approach to the problem adopted so far has proved inadequate and costly and, therefore, have considered that the protection works required should be planned by studying the problem as an integrated whole. This is particularly necessary in view of the fact that the Western Gandak Canal, which is to close proximity to the Chhitauni Bund in some reaches. It is necessary to keep the river as far away as possible from the Western Gandak Canal in order to obviate any adverse developments when the canal comes into operation to prevent any damage or loss to the canal proper and the areas served by it in U.P. and Bihar.

5.48. Keeping this in view, the Chhitauni Bund Committee have made a comprehensive study of the behaviour of the river during the floods of 1966-67. Under their direction model experiments have also been carried out at the Irrigation Research Institute, Roorkee. Based on these studies they have made the following recommendations:

1. *Works in Nepal territory—*

	Rs. lakhs
(a) Construction of 3 spurs in Gap ' B ' Bund	29
(b) Extension of spur No. 10 at Gap ' B '	6
(c) Protection of tail end of Gap ' B ' bund by wire boulder crates	02.5
(d) Construction of spur on the Nepal bund	8.50

Items (a) and (b) have been completed and (c) and (d) have been taken up.

2. Works in U. P. territory—

	Rs. lakhs
(a) Raising and Widening of the left bank of Naraini canal from bund upto mile 8	19
(b) Construction of two spurs at miles 3/0 and 4/2 of Chhitauni bund with a retired bound connecting their shanks	196
(c) Raising and strengthening Chhitauni bund from mile 0/ to 2/0	11
(d) Retaining Chhitauni bund from mile 2/0 to 3/0	33
(e) Construction of two spurs between miles 2/0 to 3/0	63
(f) Protection of Chhitauni bund and shank of spur at mile 3/0 with pitching and apron	10

5.49. Item (b) has been completed. The other works have been taken up. The Chhitauni Bund Committee considers that the above works should be adequate to give reasonable protection to the Western Gandak Canal under construction and vast areas in U.P. territory.

5.50. In a note submitted to the Committee regarding Western Gandak Canal project (U.P. portion) it has been stated that "The execution of works on the reach of Main Gandak Canal from mile 20 to mile 32 has been suspended on the recommendation of the Chhitauni Bund Committee at Bahadurabad on 5th March, 1967 on the insistence of Bihar Government. This restriction should be vacated as early as possible so that targets as fixed could be achieved."

5.51. When asked to state the reasons for suspension of the above-mentioned works and the proposals regarding vacation of this restriction, the Committee was informed in a written note in February 1968 that "When the present alignment of the Western Gandak Canal in the mile 20 to mile 32 was approved, the minimum distance between the Great Gandak river and canal alignments was about 2 miles and no danger was apprehended from the attack of the Great Gandak. However, in recent years there has been considerable western movement of the Great Gandak river. The distance between

the river bank and the canal alignment has been steadily decreasing and the minimum distance at present is about 1/4ths of a mile. The western trend of the river Gandak is still continuing. It has, therefore, become necessary to make a review of the alignment in this reach so as to keep the canal safe from the onslaught of the river. The matter was considered by the Members of the Chhitauni Bund Committee and the Gandak Technical Committee at a special meeting held on 4th March, 1967 and 5th March, 1967. At this meeting, it was decided that further work from mile 20 to 32 of the present alignment of the canal should be suspended and that detailed surveys and estimates of the present alignment of the canal on the west of the Little Gandak, within the same mileages, should be carried out and estimates prepared. It had also then been decided that, whatever be the alignment of the Western Gandak Canal in this reach, the river should be held as far away as possible. In pursuance of the above decision the work in the reach mile 20/0 and 32/0 was suspended. Investigations have also been carried out for the alternative alignment of the Gandak Canal in reach mile 20 to 32 and estimates have been prepared. These were considered at a joint meeting of the Chhitauni Bund Committee and the Gandak Technical Committee at a meeting held on 7th December, 1967. It was decided at this meeting that one more alignment which might reduce the cost by Rs. 50 to 60 lakhs should be investigated before a final decision was taken on the alignment. It was also pointed out that in the light of the discussions on the Annual Plan for 1968-69, held in November, 1967 there would be no funds available for execution of works below mile 20 of the Western Gandak Canal till the end of March, 1969 and therefore till then there would be no hold up of work for want of a decision on the alignment. In the meanwhile detailed studies could be carried out on the various alternative for taking final decision in the matter. It was further decided that all the studies should be done expeditiously and minimum river training works required to hold the river at its present position at mile 3 of the Chhitauni bund should be carried out and situation watched during the floods of 1968. The trend of the river course during the period would also help in arriving at a final decision on the alignment of the Western Gandak Canal."

5.52. When asked during evidence about the circumstances in which breaches in Chhitauni bund took place in 1966 and precautions taken to avoid the recurrence of such breaches in future, the representative of the Government of Uttar Pradesh has stated "In 1966, there were unprecedented floods in the Gandak river. The river which was quite some distance away from the bund came very close to the bund and directly attacked it. Because of that attack,

the bund was breached at some places. There was widespread damage and a large area was flooded and there was damage to the canal also in some reaches. Then the Government appointed a Committee consisting of the Chief Engineer, Gandak Uttar Pradesh, the Chief Engineer, Bihar and the Chief Engineer of the Railways because the railway embankment was also involved under the Chairmanship of the Chairman of the Central Water and Power Commission. They got some model experiments conducted in Roorkee Research Institute and on the basis of the studies made in the model experiments, the Committee recommended certain works for holding the river in check at that point of attack... On the basis of the Committee's recommendation, the report was finalised in January this year. All the works have been executed. They have been completed before the start of the rains this year and it is now expected that the river will be held in check and the bund will not breach."

5.53. When asked why these breaches were not anticipated when the project report was prepared and what was the additional cost involved, the representative of the Government of Uttar Pradesh stated "On the basis of the information that was available and that could be foreseen at that time, and from the studies made, it was not considered that it would attack the Chhitauni bund on that point of the alignment of the canal, but it was good that this did happen at that time, because now they have been able to take necessary action. In big projects like this, these things do happen sometimes and such a contingency cannot be foreseen and provided for. In the original cost there was no provision made for river training works. This has cost Rs. 4½ crores—the river training work to prevent the river from attacking at various points of alignment of the canal in Uttar Pradesh, not on the breach alone."

5.54. The Chief Engineer, Gandak Project, U.P. has stated that "at that moment the project was not at such a stage that any major catastrophe would have occurred to the project itself. As regards damages due to floods, usually that district suffer from flood. So that is not peculiar or relevant to the project. Only the earthwork executed at that place was affected. As regards the time-schedule the alignment between mile 20 and mile 30 of the canal is under the consideration of the Technical Committee, whether the original alignment should remain or it should be shifted west. As far as holding up of the work on that account is concerned, no work can be executed until that is decided. In the meanwhile financial stringency has also been affecting the work. So I do not think any delay has occurred yet on account of indecision about the alignment."

When asked when the shift in the river commenced and when the reinforcing and extending the bund was undertaken, the Chief Engineer (Floods), Central Water and Power Commission has stated before the Committee "The shift commenced in 1964. The Chhitauni Bund Committee was set up in 1965. In 1966 they spent some money after the flood season or after the breach occurred. Before the breach, some small work was done."

5.55. The Committee note that although there have been repeated attacks by the river of Chhitauni bund for a considerable period and breaches had taken place in this bund as early as 1958, no provision had been made for river training works until 1966. They note that four spurs have already been constructed to hold the river at its present place and an expenditure of Rs. 3-1/2 crores has already been incurred and another Rs. 1 crore would be required for strengthening these spurs. The Committee hope that with the construction of these spurs it would be possible to prevent the river from attacking at various points of alignment of the canal.

5.56. The Committee feel that in a project of this nature, provision should have been made in the very beginning for river training works. They hope that in future, as and when a project of this magnitude is taken up for execution, it would be fully investigated and all precautions to prevent such breaches taken well in advance.

5.57. The Committee would also stress the need for maintaining a close vigilance at the Chhitauni Bund site. They realise that in spite of careful planning, occasions may arise in future when due to unforeseeable circumstances, it might be necessary to initiate measures on an emergent basis. The Committee recommend that in such circumstances, the senior officials in direct charge of the bund should be given necessary authority and assistance so that he might initiate corrective measures expeditiously.

CHAPTER VI

CONCLUSION

Benefits of the Project and Utilisation of Irrigation Potential

6.1. According to a note furnished to the Committee by the Government of Bihar, Gandak Project is expected to provide the following benefits:—

- (a) The additional irrigable area in Bihar after the completion of the Project will be of the order of 28.45 lakh acres. The total additional yield is expected to be of the order of Rs. 28.45 lakh tons on the assumption that with irrigation and improved agricultural practice the additional yield per acre will be a ton. About half of this is expected to be food crops and the rest cash crops.
- (b) On introduction of irrigation, several sugar, rice, jute, paper and other mills are likely to grow in the area which will provide increased employment to local people. People will also find more employment in land due to increased cultivation.
- (c) The condition of live stock also will improve because of better supply of fodder and water. The standard of living of rural population will also rise due to stimulation of business and increased agricultural production.
- (d) The State-Exchequer will gain in the shape of water rate, saving in famine expenditure.
- (e) The Central Government will get increased revenue from excise duties on sugar and tobacco.
- (f) The Railways will get better income on account of greater movement of agricultural produce and labour.

6.2. As regards Uttar Pradesh portion of the Project the Committee have been informed that the Project envisages construction of 1241.5 miles of irrigation channels and remodelling of 106 miles of existing channels of Naraini Branch System which is anticipated to provide irrigation facilities to 7,11,750 acres of culturable area in

Gorakhpur and Deoria districts of Uttar Pradesh. The area proposed to be irrigated for Rice, Sugarcane and Rabi is 4,38,000 acres, 1,64,500 acres and 1,09,500 acres respectively. The gross commanded area in these two districts is 13,32,000 acres and the culturable commanded area is 10,95,000 acres. Moreover, the following agro-based industries are likely to come up—Sugar Mills, Rice Mills and Card Board Factories.

6.3. As regards Nepal, an area of 1,44,000 acres will be irrigated in Nepal which is estimated to yield annually additional agricultural produce valued at Rs. 9 million. Moreover a power house with an installed capacity of 15,000 KW will supply much-needed power to Nepal.

6.4. The Committee have been informed in a written note that "It is also pertinent to note that the canals would serve an area of the State where people are hardworking; the pressure of population is very heavy, and the soil is generally fit for multiple cropping. The people are conscious of the benefits of irrigation, the Champaran district having known perennial irrigation from the Tribeni Canal System for the last five decades or so. In spite of these favourable circumstances, the overall economy of the region is depressed, and large-scale migration of the population, particularly from the Saran district, takes place every year in search of livelihood. In the year 1967-68 most of this region, except for areas where assured irrigation was available, had been hard-hit by droughts. The drought has also clearly demonstrated the importance of irrigation based upon perennial sources. On the completion of the Project, the region going to be benefited would not only feed itself, and the rest of Bihar but might be in a position to export foodgrains to other States also".

6.5. When asked during evidence if any scheme for the integrated development of the area and for the utilisation of irrigation potential created has been drawn up, the representative of the Ministry of Irrigation and Power has stated before the Committee "The Kosi area Development Commissioner will also be incharge of Gandak area. The ayacut development programme worked out for Kosi will also be applicable to this. Apart from that the decision to take up water-courses upto 2 cusecs itself will enable the utilisation of water by the cultivators. The Champaran district is also proposed to be included in this bloc." When asked if small farmers will also get benefit of irrigation, he stated "that is the purpose of having ayacut development programme. There is a high-powered Commissioner who will go into the subsidiary part of it—land development, water-channels,

inputs-fertilisers, seeds credit etc.” The representative of the Government of Bihar has added: “The Kosi Land Development Commissioner’s organisation was set up in 1965 and has given good results. It has been switched on to Gandak Project also....I can cite the example of the Tribeni Canal which is almost fifty years old. It has no water-courses. It has distributaries of five cusecs and the irrigation is from field to field instead of having water courses. Of course this is possible when you have only long-maturing paddy. If the cultivators want to switch over to the 110 days paddy which is coming, into currency and have three-crop patterns water-courses and field channels will be needed”. As regards utilisation of water potential created he has stated: “The rainfall in Champaran district is fairly heavy—50 to 60” annually but all concentrated in 3-4 months. But people have come to realise the advantage of irrigated paddy and irrigated wheat. That is why we expect that the canal which we are constructing would not be a standby but would also be utilised fully.”

6.6. When asked during evidence if the entire irrigation potential created in the Gandak Project would be utilised or the water would be allowed to go waste, the representative of the Government of Bihar has stated before the Committee, “The experience in Kosi is opening up the eyes of the cultivators. With hybrid varieties of seeds and the high doses of fertiliser, utilisation of irrigation water and yields are going up, and we hope that the Gandak Canal will be much better utilised than at present envisaged”. The representative of the Ministry of Irrigation and Power has added “I am optimistic that in view of the development which is taking place and the real break-through in the rural economy, everybody will start using the water and getting benefit from it.”

6.7. The Committee note that the Gandak Project has vast irrigation potential which, if properly utilised, can augment agricultural production considerably. The Committee are glad to be told that the Project would lead to an all-round development of economically backward districts of Uttar Pradesh and Bihar which will come under the Command Area of this project. Considering the importance of the project in the context of agricultural and economic development of the area, the Committee would urge that the project should not be allowed to drag on for a considerable length of time and be completed expeditiously.

6.8. As the Gandak Canals would shortly provide water for irrigation purposes, the Committee would suggest that a suitable cropping pattern in the area should be developed. In this connection

they would also suggest that the Intensive Agricultural Development Project Scheme for Champaran district which has already been prepared by the Area Commissioner should be finalised so that an intensive development of the Command Area of Gandak Project could be undertaken without delay.

6.9. The Committee are glad that for 1968-69, the Central Government have granted assistance outside the State Plan for 7 projects including Gandak Project. The Committee hope that this policy of granting financial assistance outside the State Plan for major projects of national importance will be continued in future years also.

NEW DELHI;
 March 24, 1969.
 Chaitra 3, 1891 (Saka).

P. VENKATASUBBAIAH,
 Chairman,
 Estimates Committee.

APPENDIX I

(Vide para 2·6 of the Report)

Statement giving the break-up of rise in the cost of land, labour, materials etc. which have been instrumental in raising the cost of the Project.

(i) Increase in the cost of labour as follows :

Type of labour	Labour rate of 1958 in the then schedule on which Project estimate of 1958 was framed	Labour rate as now paid to local labourers	Per cent excess	Cost for imported labourer including cost of transport and accommodation	Per cent excess
			Percent		Percent
Male Mazdoor	1·50	3·00	100	5·00	233
Female Mazdoor	1·25	3·00	140	4·00	220
Boy Mazdoor	1·00	2·00	100	Not imported	..
Skilled labourer	2·00	4·00	100	6·00	200
Blacksmith 2nd class	3·00	6·00	100	8·00	167
Blacksmith 1st class	3·50	7·00	100	10·00	186
Mason 2nd class	3·50	6·00	72	8·00	129
Mason 1st class	4·00	7·00	75	10·00	150
Carpenter 2nd class	3·50	6·00	72	8·00	129
Carpenter 1st class	4·00	7·00	75	10·00	150

(ii) Increase in the cost of materials as follows :

Sl. No.	Materials	Rates as provided in Project Estimate for Gandak Barrage	Unit	Present market rate	Unit	Percentage increase
1	Course Aggregate	15/-	% cft.	30/-Market	% cft.	100%
2	Local Sand	8/-	% cft.	15/-Project revised schedule	% cft.	87%
3	Sone Sand	65/-	% cft.	100/- Do	% cft.	54%
4	Cement	5·80	cft.	6·78 Do	cft.	17%
5	Reinforcement including bending & banding -	800	ton	1320NPCC contract	ton	65%

(iii) Increase in the cost of land as follows :

	Rate per acre	
	In the previous estimate	In the present estimate
Nepal Eastern Canal	Rs. 800	Rs. 3000
Nepal Western Canal	800	1000
Saran Canal	Pmt. 1500 Ty. 100	2200 250

(iv) Other increases :

Rupees
crores

(a) Increase in quantity by way of Excavation and De-watering	1.00
(b) Increase due to items not provided earlier like Sheet Piles, Granite Blocks and Eastern Guide Bank	1.17
(c) Increased provision for Western Guide Bank and Afflux bund	0.26
(d) Increase due to revised provision for distribution system at Rs. 74/- to Rs. 81/- per acre as against Rs. 34.5 per acre provided in the estimate	10.15
(e) Increase due to change in scope	
(i) Construction of water courses upto 2 cusecs capacity Instead of 5 cusecs as provided in the original estimate accounts for an increase of	8.94
(ii) Construction of Ghorasahan Branch Canal accounts for	3.72
(iii) Construction of Dhanaha Branch Canal accounts for	0.45

APPENDIX II

(Vide Para 2.9 of the Report)

Statement showing the details of dates of Receipt and sending of comments etc. by Central Water and Power Commission

BIHAR PORTION

U. P. PORTION

Revised estimate Rs. 94.22 (1965) crores	Revised estimate; Rs. 15.61 (1961) crores Revised estimate Rs.46.79 (66) crores)	
3 copies received on Dec. 1965	Date of Receipt in CW&PC 12-1-62	Date of receipt in CW&PC May, 1967.
3 copies received on Feb. 1966		
Preliminary comments sent on	16-5-66	Technical comments sent on 21-11-62
Technical comments sent on	14-4-67	
Comments on estimate sent on	13-3-68	Comments on estimates sent on 22-3-63 Technical comments sent on 11-12-67.
Reply to preliminary comments received on	24-7-67	Reply to Technical comments received Comments on estimate sent on 21-5-68
Replies to technical comments on received on	19-4-68	On 6-7-63.
Replies to comments to estimate received on	19-6-68	Replies to comments on estimate received On 22-3-68.
Under finalisation in CW & PC The cost is now Rs. 103.04 crores. revised		Replies to comments on estimates are awaited. Further comments of CW & PC sent on Further Technical comments of CWP&C sent on 22-7-68.
		7-2-64. Replies of State received on 23-9-64. Final comments of CW&PC sent on 2-3-65. The estimate revised as a result of the comments sent in May 1967.

APPENDIX III

(Vide para 2·23 of the Report)

Statement showing dates of meetings of Gandak Control Board together with important decisions

Sl. No.	No. of the meeting with date	Important decisions taken
1	1st Meeting (21-11-61 at Patna)	<p>(i) The Board agreed that pending the decision of sharing of cost of works of common benefits between the states of Bihar and U. P. the joint project estimate totalling Rs. 52·034 crores be given administrative approval.</p> <p>(ii) The Board recommended for the establishment of a separate office for Gandak Control Board at Patna.</p> <p>(iii) The Board endorsed the arrangement made between the two states delegating powers to the project functionaries.</p> <p>(iv) The Board decided to constitute a Technical Committee to examine the Project Estimate and an Emergency Committee to deal with emergent matters which cannot wait for the consideration of the Board.</p>
2	2nd Meeting of the Board held at Patna on 31-1-1962	Only routine matters were disposed of.
3	3rd Meeting of the Board held on 3-9-62 at Lucknow	The Board decided that the Main Western Canal up to 55·5 miles in U.P. should be lined.
4	4th Meeting of the Board held at Patna on 6-12-63	(i) The Board approved the schedule of rates of Gandak Project in Bihar.

Sl. No. of the meeting with date

Important decisions taken

(ii) The Board delegated special powers to Chief Engineer, and other officers of the Gandak Project for the execution of the project in Bihar.

- 5 5th Meeting of Board held at Ranchi on 25-7-64 (i) The Board approved the practice with regard to preparation of schedule of rates of Gandak Project in U.P.
- 6 6th Meeting of the Board held at Mussoorie on the 11th and 12th June, 1965. (i) Additional powers were delegated to the Chief Engineer for Bihar and U.P.
(ii) Schedule of rates of U.P. were revised.
- 7 7th Meeting of the Board held at Velmikinagar on 11-12-65. (iii) The Board decided that the Main Western Canal in reach mile 55-4 to 81-5 in U. P. should be lined.
Some additional powers were delegated to the officers of U. P. for execution of the Gandak Project in U. P.
- 8 8th Meeting of the Board held at Patna on 6-8-1966 (i) The Board approved an accelerated programme for the execution of the Gandak Project in Bihar involving a total expenditure of Rs. 66.33 crores during the 4th Five Year Plan for irrigating 20.00 lac acres.
(ii) Modifications in the schedule of rates for Gandak Project in Bihar were approved.
- 9 9th Meeting of the Board held at Patna on 21-4-67 (i) Some additional powers were delegated to the officers of Gandak Project in Bihar.
(ii) The Board raised the minimum wage of a worker on muster roll to Rs. 3/-
Only routine matters were discussed.
- 10 10th Meeting of the Board held at Lucknow on the 22nd Nov. 1967.

APPENDIX IV

(Vide para 3.22 of the Report)

Statement showing amount of Loans/Grants (i) asked for by the Government of Bihar (ii) recommended by Working Group and (iii) sanctioned by Central Government for Execution of the Gandak Project.

(Rupees in lakhs)

Year	Requirement estimated by State Government			Recommendation of the Working Group			Amount sanctioned by Govt. of India			Remarks
	Loan	Grant	Total	Loan	Grant	Total	Loan	Grant	Total	
I	2	3	4	5	6	7	8	9	10	11
1962-63	Nil	Nil	Nil	Nil	Nil	Nil.	
1963-64	275	Nil	275	117	..	117	20	Nil	20	
1964-65	500	Nil	500	*400	..	*400	500	Nil	500	*Out of this a sum of Rs. 100 lakhs was to be diverted for the Kosi Hydel works.
1965-66	700	Nil	700	400	..	400	493	100	593	
1966-67	925	75	1000	700	100	800	795	50	845	
1967-68	1325	250	1575	1325	250	1575	680	300	1033	
1968-69	1155	307	1462	790	250	1040	†1150	250	1400	†Accumulated arrear upto year 1966-67. †Includes Rs. 100 lakhs to be paid to the U. P. Government towards Bihar's share of expenditure on common works executed by U.P.

APPENDIX V

Statement showing Summary of Recommendations/Conclusions

S. No.	Reference to Para No. of the Report.	Summary of Recommendations/Conclusions.
1	2	3
1.	1.21.	The Committee note that while the Preliminary Report of the Gandak Project was prepared as early as in 1951, the administrative sanction to the Project was given only in 1962 and even after that for two or three years work on the Project was not started in right earnest. This delay has not only deprived the people of the command area of large benefits but has also resulted in manifold increase in the cost of the project.
2.	1.22	The Committee appreciate the difficulties of Government in simultaneous execution of two river valley projects in the same State, viz. Kosi and Gandak and providing the needed resources in the initial stages.
3.	2.12.	The Committee note that the estimated cost of the Project has risen from Rs. 52.03 crores to Rs. 149.83 crores i.e., an increase of about 185 per cent and by the time the project is finally completed, the estimated cost is likely to go up still further. The Committee have noted that this huge increase in cost is stated to be a common feature in the case of all the major river valley projects in the country. The Committee feel that the economics of the Project get vitiated by revision of the Project estimate and the allocation of the resources for different projects also gets disrupted.

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In regard to Gandak Project, the Committee feel that while rise in cost of land, labour and material is to some extent responsible for this increase, factors like subsequent changes in the designs, additions to works etc. were also to a large extent responsible for the increase in costs. The Committee feel that these factors could have been envisaged in the initial stages so that the necessity of subsequent changes on a large scale could be obviated. The Committee, therefore, recommend that before a river-valley project is taken up for execution, the estimates for the same should be prepared after full examination of all aspects and necessary investigations so that the need for subsequent changes is avoided.

4. 2.13. The Committee further suggest that the reasons for the enormous increases in the estimates of most of the river-valley projects in the country should be examined fully by the Government and steps taken to avoid increases of such dimensions in future.
5. 2.14. The Committee further note that there has been inordinate delay in the Central Water and Power Commission in the clearance of the revised estimates. The revised estimates of the Project relating to Bihar Portion which were submitted in 1965 have not yet been cleared and in the meantime another revision has become necessary. The first revised project estimates relating to the U.P. portion which were submitted in January, 1962 were cleared in May, 1967 only while in the same month another revision had become necessary. The second revised estimates has not been cleared so far. The Committee are not happy over the delay of 5 years in clearing the project estimates. The Committee noted a similar tendency in the case of Kosi Project also and in their 68th report on Kosi Projects, they have already recommended that "as and when
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the revised estimates for any project are unavoidable, the same should be examined fully and expeditiously by the Central Water and Power Commission so as to avoid delays, doubts and uncertainties about execution." The Committee cannot over-emphasise the need for expeditious vetting of the Project estimates so that there is no delay in execution. In the interest of maximum economy and efficiency it is desirable to prepare properly phased plans for execution of the various components of the Project.

6. 2.30. From the resolution issued by the Government of India, the Committee note that the Gandak Control Board was set up with a view to ensuring efficient, economical and early execution of the Gandak Project. The Committee also note that the Control Board machinery has been very helpful in resolving inter-State disputes. The Committee have also been informed that the question of reorganising the Board with the Union Minister of Irrigation and Power as Chairman is under the consideration of the Government.
7. 2.37. The Committee note that the deliberations of the Gandak Co-ordination Committee have been useful in sorting out many difficulties and resolving differences with His Majesty's Government of Nepal and that the discussions at the sittings of the Committee have been quite fruitful. The Committee hope that meetings of the Co-ordination Committee would be held regularly.
8. 3.26. The Committee note that although the Gandak Project was taken up for execution in 1962-63 and the Government of India agreed to provide cent percent earmarked loan assistance for the
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project in August, 1963, the project has continuously been suffering from dearth of funds. The Committee note that except in 1964-65, in none of the years, the requirements intimated by the State Government were provided with the result that the progress of the project has been behind schedule and the target of providing irrigation from *kharif*, 1968 has not been achieved. The position has been particularly unsatisfactory in 1967-68, when against an amount of Rs. 13.25 crores recommended by the Working Group to be given as loan for the project, only a sum of Rs. 6.80 crores was provided. The result was that the work had to be stopped due to shortage of funds, leading to its abrupt discontinuance. While realising that the Central Government have its own financial limitations, the Committee cannot but reach the conclusion that there was lack of proper co-ordination between the Centre and the State concerned, and no timely intimation was given by the Central Government to the State authorities about its inability to provide funds to the extent required. As matters stood, the State Government concerned geared up its machinery to complete accelerated programme of work amounting to Rs. 18 crores, obviously on the assumption that funds to this extent would be forthcoming. The Committee cannot too strongly emphasise the need for maintaining an intimate rapport with the State authorities concerned in regard to allocation of funds for projects which have already been cleared by the Central Government for execution with Central assistance. They hope that the quantum of assistance to be provided to the State Government will be settled and intimated to them well in advance so as to assist them in proper phasing and planning the work programmes.

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3.27

The Committee would like to stress that in view of the growing and imperative need for

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irrigation for the purpose of sustained agricultural development in the country it should be laid down as a national policy that all major irrigation projects like Gandak which would result in substantial irrigation benefits to the people should be executed at the optimum pace and once an accelerated programme for its execution is adopted, the same should not be allowed to suffer because of inadequate provision of funds. It is needless to say that delays in execution ultimately result in the estimates of the project going up and people being deprived of the irrigation benefits in time.

10. 3.28. The Committee, therefore, recommend that in view of the fact that Gandak Project is in an advanced stage of completion and can give immediate irrigation benefits, top priority should be given in the Fourth Plan for its early and speedy completion. They would like that all efforts are made for completing the project during the Fourth Plan itself.
11. 3.29. The Committee are glad to note that for the year 1968-69, the financial requirements of the Gandak Project are being met in full and as against the requirement of Rs. 21 crores, intimated by the State Governments, an amount of Rs. 20.50 crores is being provided. The Committee note that this also includes an amount of Rs. 8 crores which is being provided as special assistance. The Committee hope that this policy of providing adequate finance for the execution of the Project by providing special assistance if necessary, will be sustained in the next few years also so that the target of completing the project during Fourth Plan period may be achieved.
12. 3.36. The Committee note that Gandak Project is one of the comparatively cheaper projects and
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the cost per acre of the project compares favourably with most of the major irrigation projects in the country. This further strengthens the view held by the Committee that the execution of the project should be undertaken at the optimum pace particularly when the project is likely to result in great benefits to the people of the area.

13. 4.10. The Committee note that the Gandak Project includes as one of its major components the construction of a barrage on the river Gandak at an estimated cost of nearly Rs. 1780.96 lakh. The Committee further note that when work was started in December, 1963, the barrage was scheduled to be completed by June, 1967. This target date was subsequently revised to June, 1968 which has further been revised to December, 1968. Work on the barrage is now expected to be completed by March, 1969. The Committee further note that during none of these years the progress of work on the barrage has been according to schedule.
14. 4.11. The Committee cannot but reach the conclusion that there has been unusual delay in the construction of the barrage and although the target dates have repeatedly been extended, the same have not been adhered to. The Committee are of the opinion that any delay in the construction of the barrage would be largely responsible for delay in giving irrigation benefits to the people. It will also lead to a rise in the cost of the project. They therefore hope that such delays would be avoided in future and work on the barrage would be completed soon.
15. 4.12. The Committee also observe from the statement of the representative of the National Projects Construction Corporation made before the Committee and from the material supplied to
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them that delay in the finalisation of the designs and increase in the scope of work have also been partly responsible for delay in the construction of barrage. The Committee recommend that whenever a major project is taken up for execution, all the details regarding designs, scope of work etc. should be thoroughly gone into before actual work starts and no delay should be allowed to occur on account of change in design and scope of work.

16. 4.20. The Committee note that after completion, the Western Gandak Canal will provide irrigation benefits to more than 22 lakh acres of land in Bihar, U.P. and Nepal. The Committee further note that the Canal will serve those areas in Bihar and U.P. which are economically backward. The Committee are, however, unhappy to learn that progress of work on the canal is not according to schedule because of inadequacy of funds and work on the Saran Canal has totally been stopped. Even with the proposed additional funds for the Gandak Project as a whole during 1968-69 no work on the Saran Canal is expected to be undertaken.

17. 4.21. The Committee fail to understand why work on the Saran Canal was undertaken in the beginning in the Bihar portion, if irrigation benefits were to accrue only after the completion of the U.P. portion of the Western Canal. The result of stoppage of work on the Saran Canal in Bihar has been that an amount of Rs. 5 crores has been blocked without any irrigation benefits for many years to come and the Government of Bihar is being required to spend lakhs of rupees every year for its upkeep. The Committee observe that there has not been proper phasing of the Saran Canal and its synchronisation with the U.P. portion of the canal. Apart from the fact that a large amount is going to be spent every year

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for the maintenance of the canal, no benefits would accrue to the cultivators who with the digging of the canal were expecting irrigation benefits at an early date.

18. 4.22. The Committee strongly urge that phased programme of work for the early completion of the Western Gandak Canal including the Saran Canal should be prepared and necessary funds provided so that as soon as the U.P. portion of the Canal is ready, irrigation benefits might accrue to the people of the area. Steps should also be taken to advance, the target of completion of U.P. portion earlier than 1971-72 in view of the importance of the Canal. The Committee hope, as promised by the representative of the Ministry of Irrigation and Power, the Central Government would soon hold a meeting with the representatives of the State Governments of Bihar and U.P. and prepare a co-ordinated programme of work in this project.
19. 4.31. The Committee regret to note that the progress of this important canal (Tirhut Canal) has been behind schedule and the programme of providing irrigation from the canal has not been realised mainly because of financial limitations. The Committee feel that the delay in the execution of the programme has deprived the people of districts Champaran, Muzaffarpur and Darbhanga, which are susceptible to drought, of irrigation benefits.
20. 4.32. Now that the Central Government have provided funds to the extent required during 1968-69, the Committee hope that an attempt will be made to complete the remaining works of the canal as soon as possible so that irrigation benefits could start accruing at an early date. In view of the fact that the programme of year-wise creation of irrigation potential with effect from 1968 Kharif, which was drawn up earlier, is now out-of-date,

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the Committee would like to suggest that a revised programme for providing irrigation benefits from this canal should be drawn up and strictly adhered to.

21. 4.35. The Committee note that the survey work of the Nepal Western Canal has been completed and the matter will be pursued further at the next meeting of the Gandak Co-ordination Committee. They also note that the Canal would irrigate about 25,000 acres within the Nepal Territory over and above the area of 40,400 acres Gross Command Area mentioned in the Agreement. The Committee further note that according to the Agreement between His Majesty's Government of Nepal and the Government of India executed in 1964 this canal is to be completed, as far as possible, within one year of the completion of the barrage. Since the barrage is now expected to be completed by March, 1969, the Committee hope that early steps for the finalisation of the alignments of the canal and its execution would be taken.
22. 4.39. The Committee note that Dhanaha and Ghorasahan Branch Canals were not included in the original projects and were later on sanctioned as extension schemes. The Committee, however, note that progress of these schemes have not been satisfactory. The Committee fail to understand why these canals could not be included in the framework of the original Gandak Project. However, since these Extension Schemes have been sanctioned, they should not be allowed to drag on and action should be taken to complete them.
23. 4.44. The Committee note that the work of the Nepal Power House has not been progressing according to schedule and the Power House is
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		<p>expected to start functioning only by June, 1970. The Committee hope that the Power House, which is expected to supply much-needed electricity to Nepal, would be completed within the target date now fixed.</p>
24.	5.7.	<p>The Committee note that the performance of the National Projects Construction Corporation, which have been entrusted with the construction of the Gandak Barrage, has not been according to schedule in the initial stages and that organisational deficiency in the National Project Construction Corporation was partly responsible for the delay. They also note that necessary improvement has been effected in the organisation and work has been completed substantially and what remains to be done is very little.</p>
25.	5.8.	<p>The Committee observe from the statement of the representative of the National Projects Construction Corporation that the Corporation had agreed to the targets although they realised that they were not likely to be fulfilled. The Committee feel that the National Projects Construction Corporation before finally agreeing to the target dates fixed/proposed for completion of projects to be undertaken by them, should have pointed out the technical or physical difficulties involved.</p>
26.	5.9.	<p>The Committee regret to note that even though the letter of intent was issued to the Corporation in October, 1963, many of the essential points were settled by the Government only in April, 1964. In order to enable the contractors to adhere to time-targets, such delays should not occur.</p>
27.	5.18.	<p>From the material supplied by the Ministry the Committee observe that Shri M. S. Ramaiah was awarded contracts for the construction of three works but in none of these the progress was according to schedule and all the three works were withdrawn from him. Since there</p>

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is litigation pending in the Court between Shri Ramkishan and the Government of Bihar, the Committee would not like to make any comments about the merits of the case. They would however like to emphasise that before awarding contracts to any individual contractors or firms, their antecedents, past performance, technical and financial capacity to do the job, etc. should be fully investigated so that there may not be any hold up of work resulting in avoidable losses due to delay in execution.

The Committee would like to be apprised of the final outcome of the arbitration proceedings and the court cases relating to this matter.

28. 5.27. The Committee note that most of the work of Gandak Project is being executed through contractors and only some small items of work are being done departmentally. The Committee note that the experience of the Government is that "on bigger works where large quantum of machinery is required to be employed, it will be better to engage contractors who have got the resources in their possession."

29. 5.28 The Committee are glad to be told that the machinery procured by the Government is fully utilised and there is no machinery lying idle for want of work. The Committee, however, note that in some cases there has been a delay of more than a year in the release of foreign exchange after the receipt of applications, particularly in 1965-66. The Committee hope that such delays will be avoided in future.

30. 5.29. The Committee also note that the repairs to equipment sometimes get delayed due to non-availability of spare parts. They would like suitable remedial steps to be taken in the matter.

31. 5.36. The Committee note that Uttar Pradesh Project estimate of 1959 contained a provision for

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lining of the Western Uttar Pradesh Gandak Canal up to Bihar. But in the revised estimate of 1961, lining was limited to 55.5 miles only. The Committee further note that the Chief Engineer, Uttar Pradesh raised the question of lining of the entire Uttar Pradesh Canal in 1962 and it was only in June, 1965 (in 6th meeting of Gandak Control Board) that a decision to line the remaining portion of main Western Canal was taken. This decision has entailed an extra expenditure of Rs. 298.5 lakh and there were also differences in technical opinion regarding the utility of the lining of the canal.

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5.37.

The Committee observe that it has taken nearly 3½ years to take a final decision on the controversy regarding the lining of the entire reach of the Western Uttar Pradesh Gandak Canal. Although it has been stated by the Government that there was no delay in the execution of work on account of delay in taking a decision on the controversy, the Committee note from the proceedings and Agenda papers of the sittings of the Gandak Control Board that the controversy has contributed to the delay in the execution of work relating to the lining of the canal. The Committee would urge that decisions on matters of such vital importance should be taken by the authorities in the quickest possible time so that any chances of delay in execution could be obviated.

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5.55.

The Committee note that although there have been repeated attacks by the river at Chhitauni Bund for a considerable period and breaches had taken place in this bund as early as 1958, no provision had been made for river training works until 1966. They note that four spurs have already been constructed to hold the river at its present place and an expenditure of Rs. 3½ crores has already been incurred and another Rs. 1

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- crore would be required for strengthening these spurs. The Committee hope that with the construction of these spurs it would be possible to prevent the river from attacking at various points of alignment of the canal.
34. 5.56. The Committee feel that in a project of this nature, provision should have been made in the very beginning for river training works. They hope that in future, as and when a project of this magnitude is taken up for execution, it would be fully investigated and all precautions to prevent such breaches taken well in advance.
35. 5.57. The Committee would also stress the need for maintaining a close vigilance at the Chhitauni Bund site. They realise that in spite of careful planning, occasions may arise in future when due to unforeseeable circumstances, it might be necessary to initiate measures on an emergent basis. The Committee recommend that in such circumstances, the senior official in direct charge of the bund should be given necessary authority and assistance so that he might initiate corrective measures expeditiously.
36. 6.7. The Committee note that the Gandak Project has vast irrigation potential which, if properly utilised, can augment agricultural production considerably. The Committee are glad to be told that the Project would lead to an all-round development of economically backward districts of Uttar Pradesh and Bihar which will come under the Command Area of this Project. Considering the importance of the project in the context of agricultural and economic development of the area, the Committee would urge that the project should not be allowed to drag on for a considerable length of time and be completed expeditiously.
37. 6.8. As the Gandak canals would shortly provide water for irrigation purposes, the Committee
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38.	6.9.	<p>would suggest that a suitable cropping pattern in the area should be developed. In this connection, they would also suggest that the Intensive Agricultural Development Project Scheme for Champaran district which has already been prepared by the Area Commissioner should be finalised so that an intensive development of the Command Area of Gandak Project could be undertaken without delay.</p> <p>The Committee are glad that for 1968-69, the Central Government have granted assistance outside the State Plan for seven projects including Gandak Project. The Committee hope that this policy of granting financial assistance outside the State Plan for major projects of national importance will be continued in future years also.</p>

APPENDIX VI

Analysis of Conclusions/Recommendations contained in the Report

I. CLASSIFICATION OF RECOMMENDATIONS

A. Recommendations for improving organisation and working:

Serial Nos. 5, 6, 7, 8, 10, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 26, 27, 29, 30, 32, 33, 34, 35, 36, 37 and 38.

B. Recommendations for effecting economy:

Serial Nos. 3, 4 and 9.

C. Miscellaneous Recommendations:

Serial Nos. 1, 2, 11, 12, 23, 24, 28 and 31.

II. ANALYSIS OF MORE IMPORANT RECOMMENDATIONS DIRECTED TOWARDS ECONOMY:

S. No. as per summary
of Recommendations
(APPENDIX V).

Particulars

(1)

(2)

3. The Committee note that all the estimated cost of the Project has arisen from Rs. 52.03 crores to Rs. 149.83 crores i.e., an increase of about 185 per cent. and by the time the project is finally completed, the estimated cost is likely to go up still further. The Committee have noted that this huge increase in cost is stated to be a common feature in the case of all the major river valley projects in the country. The Committee feel that the economics of the Project get vitiated by revision of the Project estimate and the allocation of the resources for different projects also gets disrupted.

In regard to Gandak Project, the Committee feel that while rise in cost of land, labour and material is to some extent responsible for this

(1)

(2)

increase, factors like subsequent changes in the designs, additions to works etc. were also to a large extent, responsible for the increase in costs. The Committee feel that these factors could have been envisaged in the initial stages so that the necessity of subsequent changes on a large scale could be obviated. The Committee, therefore, recommend that before a river-valley project is taken up for execution the estimates for the same should be prepared after full examination of all aspects and necessary investigations so that the need for subsequent changes is avoided.

4. The Committee further suggest that the reasons for the enormous increases in the estimates of most of the river-valley projects in the country should be examined fully by the Government and steps taken to avoid increases of such dimensions in future.
 9. The Committee would like to stress that in view of the growing and imperative need for irrigation for the purpose of sustained agricultural development in the country it should be laid down as a national policy that all major irrigation projects like Gandak which would result in substantial irrigation benefits to the people should be executed at the optimum pace and once an accelerated programme for its execution is adopted the same should not be allowed to suffer because of inadequate provision of funds. It is needless to say that delay in execution ultimately result in the estimates of the project going up and people being deprived of the irrigation benefits in time.
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