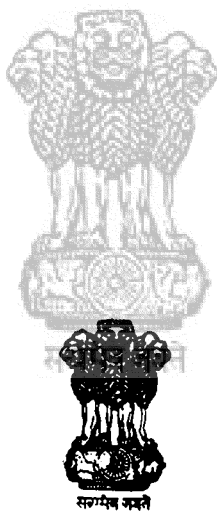


STUDY OF IRRIGATION CODES AND ACTS

AN INTERIM REPORT CONTAINING
PRELIMINARY THINKING ON SOME
ASPECTS OF THE STUDY

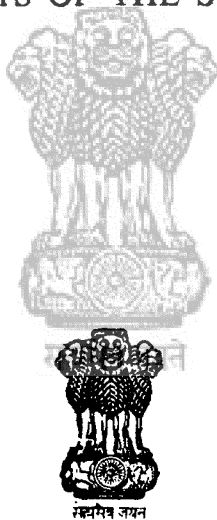


COMMITTEE ON PLAN PROJECTS
PLANNING COMMISSION
(IRRIGATION TEAM)
NEW DELHI

November 1966

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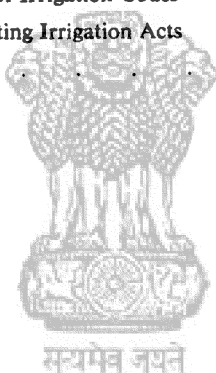


COMMITTEE ON PLAN PROJECTS
PLANNING COMMISSION
(IRRIGATION TEAM)
NEW DELHI

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CONTENTS

CHAPTER	PAGES
I General	1
II Supply of water and regulation of Irrigation	5
III Water courses and field-channels on irrigation systems	11
IV Drainage and prevention of water-logging and salination	16
V Distribution of water among cultivators sharing supply	21
VI Assessment and collection of water-rates and canal revenues	25
VII Provision for settlement of disputes and mutual rights and liabilities of persons interested in water-courses	28
VIII Agricultural aspects of Irrigation Codes	31
IX Modifications of existing Irrigation Acts	34
APPENDICES	37—50



LETTER OF TRANSMITTAL

M. THIRUMALA RAO, M.P.,
Leader,
Irrigation Team.

Government of India,
Planning Commission,
Committee on Plan Projects,
New Delhi, the November 30, 1966.

My dear Shri Chavan,

While your predecessor, Shri G. L. Nanda was Chairman of the Committee on Plan Projects, the Irrigation Team was assigned the work of looking into Irrigation Acts, Rules and Regulations etc. with a view to suggest revision of such portions thereof as do not contribute towards optimum production from irrigation supplies and as obstruct development of scientific agriculture. Whereas, a general study had to be made on all India basis, 4 States—namely Bihar, Madras, Maharashtra and Uttar Pradesh—were to be taken up for detailed study.

The team could not attend to this work on a whole-time basis before June 30, 1966 as it was busy in completing its studies in hand in various States of India, besides preparing an All India Review of Minor Irrigation Works based on State-wise field studies.

Thereafter, the team had been in a state of winding up, trailing with piece-meal extensions every month or so. As such, action as envisaged originally in the team's plan of work, in this respect, could not come into play. Still, considerable thinking has been done on various aspects of the problem set out in the terms of reference of the study. An interim report has been brought out to present the same. I am enclosing herewith a copy thereof for your kind perusal.

This report can very profitably serve as a basis for a more detailed study of the issues raised therein and of other connected matters. Further study will undoubtedly be rewarding, because it will bring out many an important aspect affecting development of irrigated agriculture in the country. The study, however, involves more than one discipline and therefore, it will apparently require an inter-ministerial unit to deal with it.

I take this opportunity of commending the work of the staff of the team in general and of Shri Baleshwar Nath, Member

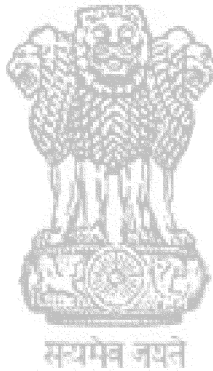
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in particular. To Shri Baleshwar Nath goes the credit of focalising attention on many an important issue, as emerge out of his countrywide familiarity with irrigational problems and comparative inter-state study thereof, which he has made good use of in compiling this interim report.

With best regards,

Yours sincerely,
M. THIRUMALA RAO

Shri Y. B. Chavan,
Chairman, Committee on Plan Projects &
Minister of Home Affairs, Govt. of India,
New Delhi.



CHAPTER I

GENERAL

1.1. Study of Irrigation Acts, Rules and Regulations in different States of Indian Union, was taken up by the Irrigation Team of the Committee on Plan Projects, Planning Commission, at the instance of the Ministry of Food and Agriculture, and as per recommendation of the Agriculture Production Board.

1.2. Letter No. 20—43/64-GMF(CO), dated 13th August, 1965 from Deputy Secretary, Ministry of Food and Agriculture to the Secretary, Committee on Plan Projects, Planning Commission, reproduced in *Appendix I*, indicates the broad terms of reference as given below:—

“Examination of irrigation codes in the States from the view-point of modern agricultural practices, availability of supplies (e.g., from storage/diversion works) etc. and making suggestions for

- (a) Improvement in irrigation management,
- (b) Simplification of the rules of management etc.”

1.3. Eventually terms of reference of the study were communicated *vide* COPP's circular letter No. COPP/Adm./1(4)/65 of 18th September, 1965 (*Appendix II*). Its main content is reproduced below:—

“(a) To review the existing provisions in Irrigation Codes and connected rules and administrative instructions concerning—

- (i) supply of water and regulation of irrigation in relation to cropping systems,
- (ii) construction and maintenance of water courses and field channels on irrigation systems,
- (iii) arrangements for drainage and prevention of water-logging and salination,
- (iv) distribution of water among cultivators sharing supply,
- (v) assessment and collection of water rates and canal revenues, and
- (vi) existing provisions for settlement of disputes and mutual rights and liabilities of persons interested in water courses; and

- (b) to make recommendations for modifying existing irrigation codes and other provisions with a view to ensuring optimum utilisation of available supplies and adoption of improved agricultural practices and development of scientific agriculture."

1.4. Because of the pre-occupation of the Irrigation Team with the study of Minor Irrigation Works in different States of India as also compilation of All India Review thereafter, the team could not give anything beyond outline attention to the work, relating to the study of Irrigation Codes till June 30, 1966.

1.5. The State Governments were, however, requested earlier to supply relevant material viz., Acts, rules executive instructions and orders etc. As a result some data was received from some of the States, which is enumerated in the statement enclosed (*Appendix III*). This data is not complete in most of the cases, and the States have again been addressed in the matter.

1.6. The *modus operandi* of the team, however, comprises of looking into the Irrigation Acts and rules thereunder in different States of India in a general way with pointed reference to the issues raised in the terms of reference outlined in Committee on Plan Projects letter referred to above. This is to be followed by section-wise study of Irrigation Acts, rules and other executive instructions and orders etc. in respect of four States i.e., Bihar, Madras, Maharashtra and Uttar Pradesh.

1.7. The study in fact involves, first of all, understanding of the intent and purpose of the existing sections of the Acts, their governing rules and regulations and to identify how far they fall short of the present day requirements of scientific irrigated agriculture. There being varying provisions for similar items in different States of India some useful suggestions could emerge out of comparative study of the existing provisions. A familiarity with these varying provisions has to be developed by the team.

1.8. The suggestions are then to be put across to technical authorities, both Irrigation and Agriculture, in different States of India and discussed with them. The team also intended to make at site field studies in concerned States, to further discuss issues with the officers concerned and to judge thereafter amendments and additions, if any, to be made to the existing provisions in different Acts, rules and regulations. This has, therefore, to be a very thought-involving process. Any action on a summary basis is not possible in these matters.

1.9. When the team has arrived at some conclusions, assistance will need to be sought from Legal experts while formulating phraseology of the proposed amendments and additions.

1.10. While suggesting any amendments, what is more important is to judge the impact of the proposed amendments on anticipated production per acre from the areas irrigated. For this purpose collaboration of agricultural experts in the line, will have to be ensured.

1.11. It may, as well be possible to introduce an element of control on agricultural operations in irrigated areas, so that areas provided with a secure system of irrigation are not permitted to linger on with low rate of productivity per acre of irrigated acreage.

1.12. In this preliminary review it is intended to bring out the preliminary thinking of the team, in respect of different items of the terms of reference in the following chapters and to comment where and how different provisions of the Acts, rules and regulations, in the opinion of the team, seem to impinge, in general, upon the efficiency and operation of irrigation management and how amendments, if any, could be contemplated thereabout.

1.13. In this respect a number of communications have been addressed to the technical authorities in different States. Replies to some of them have since been received. These are being examined and will need site visits and discussions with State authorities before the team are able to make concrete suggestions about revising the relevant sections of the Acts, rules and regulations.

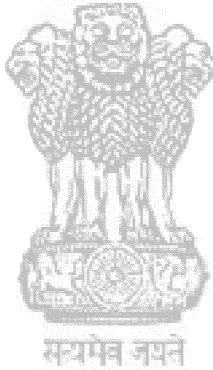
1.14. So far as section-wise detailed study is concerned, it could be progressed to a limited extent only in respect of the States of Maharashtra and Uttar Pradesh. Madras had so far not provided the basic data needed for such section-wise study to be initiated and the data received from Bihar is also yet incomplete.

1.15. Before the team could formulate any field inspection programme of the concerned areas, a change over in the formation of the team and its reformation under some Inter-Ministerial Unit was contemplated early in July, 1966. This resulted in curtailment of the team's staff, as also complete elimination of its agricultural compliment.

1.16. Only a nucleus skeleton staff was left over after July 1, 1966. Progress of the study could accordingly be of a skeleton nature, devoid of the basic content of field verification at site, which is so essential for any purposeful techno-procedural research, of the type originally contemplated.

1.17. Under the circumstances, the following chapters only briefly summarise the thinking of the team in respect of some of the items of the terms of reference of the study as could be taken up by the skeleton staff in the time at their disposal.

1.18. It is hoped that it will provide a basis for continued and more elaborate study on this important aspect governing development of irrigated agriculture in the country.



CHAPTER II

SUPPLY OF WATER AND REGULATION OF IRRIGATION

2.1. Regulation of irrigation is mostly dependent on the supplies of water available at a canal or sub-canal head. Regulation becomes increasingly important as the supplies dwindle, and becomes extremely significant when water is scarce.

2.2. In different States of Indian Union, supply of water to irrigators from irrigation works is governed in different ways depending on the nature and mode of supply, the period for which supplies are required, incidence of natural precipitation, soil characteristics of the area, topographic feature and lay of the country and eventually the habits of the people.

2.3. In the Punjab and Uttar Pradesh where Northern India Canal and Drainage Act of 1873 operates, with such amendments and additions as have been made from time to time, artificial irrigation is taken by irrigators as and when needed by their crops. There is no statutory obligation for irrigating their fields on the irrigators in these States.

2.4. In the Punjab and Uttar Pradesh while irrigation works progress, the areas intended to be commanded by canals are generally delineated on large scale topomaps. Fields falling in these commands are normally eligible to get water from canal outlets for irrigation of crops grown therein. Different types of outlets are in use in different States. In most of the States they consist of pipes or masonry barrels only with practically no improvement over the past century. But Punjab has made considerable progress in this respect and has evolved many types of module outlets which ensure more equitable distribution of water among various outlets on a channel. Where demand is keen, *osrahandi* or *warahandi* is fixed on outlets as provided under section 68 of the Northern Indian Canal and Drainage Act, of 1873.

2.5. By and large, however, only a certain percentage of the commanded area is expected to be irrigated in each season. Water rate is chargeable on the area actually irrigated season after season. Rates generally vary for different crops and cover waterings needed for maturity of crops.

2.6. On the other hand, as in the Madhya Pradesh and Vidarbha region of Maharashtra, which are governed by the C.P. Irrigation Act of 1931, water is usually supplied to irrigators

against written agreements. If permanent holders or occupiers of land in a village, mahal or chak apply for water and if the holders of at least $\frac{2}{3}$ rd of land or at least 95% of the cultivators give their consent for entering into agreement, then the rest of the landholders are also considered to have given their consent. Section 51 of this act pertains to this provision.

2.7. In the case of such agreements, water rates are chargeable from all the occupants of land covered by the agreement, whether they actually irrigate the fields or not. This provision apparently ensures administrative convenience but may not lead to optimising production through scientific use of the supplies available.

2.8. Under this Act water can be supplied on demand to those areas also which are not covered in the agreements, if surplus to the requirements of agreement areas. But water rates for such supplies are generally higher than for those under lease agreements.

2.9. The riding provision of these Acts is that in case of non-supply of water due to reasons beyond the control of the State, the cultivators are not entitled to any claim for compensation. This is in fact, only a legal protection. In practice remissions are granted on field assessment, if the crops suffer for lack of irrigation supplies.

2.10. In Maharashtra (Bombay region) and Gujarat, Bombay Irrigation Act of 1879 operates. Here block system of irrigation is practised. Under this system the land, which can be irrigated from an irrigation work even in drought years, is demarcated in the shape of blocks. Cropping patterns of the blocks are decided laying down manageable proportions of perennials and other seasonal crops depending on the volume of water available.

2.11. Long term agreements are entered into with the irrigators in the blocks. These blocks are, as far as possible, located in the head reaches of the canal system so as to minimise percolation and transmission losses. In years of plentiful supplies due to good rainfall, water is supplied to other irrigators in the command on demand. This system envisages assured benefits to selected irrigators and optional seasonal benefits to others.

2.12. In these areas cultivators are required to apply for water before every irrigation season. Necessary permits are issued to individual irrigators indicating the quantity of water to be supplied to each. Water is normally supplied to them against these permits.

2.13. In West Bengal, Bihar and Orissa, which are governed mostly by Bengal Irrigation Act of 1876 and Orissa Irrigation Act of 1959, irrigators are required to submit individual applications on prescribed forms for getting water for every fasal.

2.14. Under the Mysore Irrigation Act of 1965 applications of irrigators are sanctioned initially for a period of 6 years and they can be made permanent after expiry of 6 years.

2.15. In Bengal Irrigation Act of 1876, Bombay Irrigation Act of 1879 and C. P. Irrigation Act of 1931 there exist provisions for stopping supply of water and for cancelling the sanction of water for those cultivators who are in arrears of water dues. There is, however, no such provision in the Northern India Canal and Drainage Act, 1873 which operates in the Punjab and Uttar Pradesh.

2.16. There is apparently considerable variation in irrigation practices in different parts of the country. These variations have developed during the course of almost a century. It seems, there has not developed enough practice of exchanging views and experiences and variations have existed decades after decades.

2.17. So much variance in field practices does not seem justified by the degree of variation in local conditions. It may seem advantageous if all the practices prevalent in the country regarding supply and regulation of water for irrigation are studied and rendered to a generally acceptable pattern embodying the advantages of all the systems. This may, however, allow local variations as may seem necessary and expedient.

2.18. The preliminary studies of Acts and Rules, made available to the team by the various States, have been made to some extent with regard to supply of water and regulation of irrigation. Points raised by the team have been referred to technical authorities of the States and in some cases replies have also been received. These points are briefly discussed below:—

Refusal of water to cultivators in arrears of canal dues:

2.19. According to Bombay Canal Rules, 1934 (Rule 8 sub-rule 6 & 7) if an applicant is in arrears of water dues which became due before the date of application, his application may either summarily be rejected or sanctioned provisionally. This provisional sanction is liable to cancellation, if the arrears are not paid before the commencement of supply.

2.20. In fact, water supplied to a cultivator is utilised by him for increasing the agricultural production from his land. If

a cultivator is under really pressing circumstances, by denying him water when his crop actually needs it, production from the concerned land suffers. The quantum of production potential is thus lost and national production lags to that extent. The operation of the rule, therefore, does not serve the ends of optimum production from available resources of land and water.

2.21. The need for operation of this rule may seem avoidable in view of the provision of section 57(2) of the Bombay Irrigation Act of 1879 which provides that arrears in respect of canal dues can be recovered as arrears of land revenue and efforts to collect arrears could be made under the said section.

2.22. Accordingly a letter was written to the Maharashtra State *vide* team's communication No. COPP/IT/BS/66/3472, dated 12-4-1966. In their reply *vide* their letter No. BKS/1066/37286-1(4), dated 12-5-1966 the State authorities have said that if water is refused to one cultivator, it is sanctioned to others. The incidence of rejection or cancellation of sanction has been reported to be about 13.5% on Pravara canals.

2.23. Be it as it may, the reply of the State authorities does not meet the ends of new works on which potential is not fully utilised. In any case, the provision of the Act needs to be scrutinized more closely with particular reference to actual site conditions in different areas.

2.24. Paragraphs 226 and 227 of the Manual for the guidance of staff of the revenue divisions of the Irrigation Department, Bihar, which are based on rules 15 and 17 of the Sone, Champaran, Saran and Kamla Canals, also provide for stoppage of water and termination of long term leases at short notices, in cases where there are difficulties in realising water dues.

2.25. To a Communication sent to Bihar *vide* team's letter No. COPP/IT/BS/66/3406, of 5-3-1966 the authorities have intimated *vide* their letter No. T/C/5-103/65(P)-8382 of 15-4-1966 that in actual practice the measures outlined in paragraphs 226 and 227 are not being enforced. On the other hand, in case of new schemes some concessions are being offered to encourage cultivators to take water, even where there are arrears.

2.26. As such the said provisions are superfluous. The experience of Bihar also goes to prove that refusal of water on this account is not wholesome. Amendments to the rules therefore, seem necessary.

Preparation of land before application of water:

2.27. Rule 9 under section 31 of Northern India Canal and Drainage Act, 1873 applicable to Punjab which was later with-

drawn in 1928, provided for imposition of penalties and stoppage of water if the fields subjected to irrigation were not divided into *kiaries* or compartments not greater in area than one kanal (1/8th of an acre).

2.28. On enquiry from State authorities *vide* team's D.O. No. COPP/B/IT/66/3421 of 14-3-1966 about reasons for withdrawal of the rule, it was gathered that the rule had eventually resulted in common practice of preparing fields by dividing them into *kiaries*.

2.29. Naturally, it seems that the provision as existed earlier in Punjab is necessary for other States like Uttar Pradesh etc. where the common practice of dividing fields into *kiaries* has not yet been adopted on a large scale by cultivators.

2.30. No such rules have been tried in many other States. The point was, therefore, referred to U.P. State authorities *vide* team's communication No. COPP/IT/B/66/3125 of 16-3-1966. In their reply *vide* D.O. No. C-430/CEW of 22-3-1966 the State authorities have concurred with the idea in principle but have expressed the view that legislation alone may not be sufficient. They think the legal process may be cumbersome in its application and the idea should be propagated by demonstration and education through the agency of C. D. Blocks or Panchayati Raj Institutions.

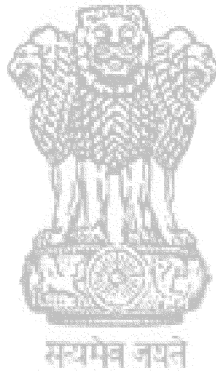
2.31. Since the legislation resulted in such magnificent results in Punjab, the team feels that legislation in this direction may be helpful in enforcing economic use of water in other States too. When, however, the practice has found favour with the people, it could be withdrawn as was done in the Punjab.

2.32. Conditions, however, have to be studied in the background of each individual region and rules have to be framed, such as will encourage cultivators to level their fields for irrigated agriculture rather than cause any hardship on them. The matter, therefore, needs to be studied in greater details before the team could formulate precise views on the point.

Control on Cropping pattern:

2.33. Section 32 of Mysore Irrigation Act, 1965 gives powers to the State Government to prescribe the kind of crop to be grown under irrigated areas and the period of sowing such crops. Such a provision in Irrigation Acts can prove extremely helpful if the change in cropping pattern as a result of construction of irrigation schemes is not forthcoming by itself.

2.34. Irrigation actually is not an end in itself. Its purpose is to maximise production from the irrigated lands. This production is a function of the cropping patterns and other agronomic practices. Such provisions in Irrigation Acts where they do not exist may seem necessary. The precise nature of these provisions will vary considerably from region to region. They must however, be provided for in Irrigation Acts so as to ensure that irrigation supplies are made scientific use of so as to yield maximum production per unit of land and water available.



CHAPTER III

WATER COURSES AND FIELD CHANNELS ON IRRIGATION SYSTEMS

3.1. There are some variations in the definition of 'water courses' and 'field channels' as contained in various Irrigation Acts and Codes in operation in different States of the country. Some important forms of these definitions are:—

- (a) "'Village-channel' (according to the Bengal Irrigation Act of 1876) means any channel by which water is led from a canal directly into the fields to be irrigated, and includes all subsidiary works connected with any such channel, except the sluice or outlet through which water is supplied from a canal to such work."
- (b) "'Water course' (according to Northern India Canal and Drainage Act VIII of 1873) means any channel which is supplied with water from a canal, but which is not maintained at the cost of the State Government, and all subsidiary works belonging to any such channel."
- (c) "According to the Mysore Irrigation Act 1965, a 'Field channel' means any water course, hikkal or pipe, having a capacity not exceeding one cubic foot per second, which is supplied with water from an irrigation work and includes all subsidiary works belonging to such field channel, except the sluice or outlet through which water is supplied to such channel or pipe."

3.2. Provisions in other Acts and Codes are more or less on the lines of any one of these definitions. Basically, therefore, it is a small channel used for conveying water from an irrigation work to a field for its irrigation.

3.3. According to rough estimates, about a quarter of the water let into a canal system is lost by losses in the water courses and field channels alone even on canals where a satisfactory system of water courses exists. In cases where the fields to be irrigated are far apart, it becomes necessary to provide long field channels. Losses in these cases are greater still.

3.4. Where field to field irrigation is practised, the loss of water in transit through the fields could easily be 50 to 60 per cent. of canal supply. Where field to field irrigation is practised, there are no field channels. As a result very little areas under rabi and other seasonal crops are irrigated. Generally rabi irrigation potential remains unutilised or under-utilised.

3.5. The only crop which subsists on field to field irrigation is paddy, usually sown in compact blocks, where water is kept standing almost throughout the crop season from sowing to harvesting. But according to many agricultural experts, even in the case of paddy, field to field irrigation is not so useful and leads to wasteful use of water available. Besides it also makes proper application of chemical fertilizers inefficient.

3.6. To stop this huge wastage of a scarce and valuable resource of irrigation water, Planning Commission has been stressing upon the State Governments the urgency of providing water courses and field channels on all the existing, as well as, new projects so that the development of irrigation keeps pace with the creation of potential. They have also pointed out the need for suitable legislation, where necessary, to expedite the construction of new water courses and field channels. *Appendix IV* gives the position regarding progress made in different States so far.

3.7. Irrigation Codes and Acts, as discussed in the following paragraphs, generally envisage that responsibility for constructing and maintaining the water courses and field channels beyond outlet is to be borne by the beneficiaries as a customary obligation. But quite often this obligation does not appear being fulfilled. It has been observed that in most parts of the country field to field irrigation takes place. Water courses and field channels are more conspicuous by their absence.

3.8. Several States, in the last few years, have amended their Irrigation Acts in this respect to provide for expeditious construction of water courses and field channels. Some of them have also decided to make provisions for the construction of main water courses, at State cost, in their projects.

3.9. In Punjab, the Northern India Canal & Drainage Act of 1873 was amended in this respect *vide* Punjab Act No. 21 of 1958, Act 23 of 1965 and rules thereunder *vide* notification No. 4333-IW-59, dated 25th February, 1959. These amendments appear to contain bold provisions.

3.10. The outstanding provisions of the amendment which appear specially helpful in achieving the ends in view are the powers vested in Divisional Canal Officer to take possession of the land required without going through the usual long drawn out procedure of the land acquisition Act and the exclusion of the jurisdiction of a civil court from matters relating to water courses etc.

3.11. It needs, however, ascertaining by discussion and field visits, whether the new provisions have succeeded in meeting the

requirements of the problem and helped in expediting the development or there are still some hurdles left to be overcome.

3.12. Uttar Pradesh Government also amended the concerned sections of the Northern India Canal and Drainage Act in 1963. The amendment contains many useful provisions but they do not appear to be as far-reaching as those of the Punjab. There occur procedural delays to achieve the results. This will be clear from *Appendix V* (an extract of a D.O. letter from a Superintending Engineer of U.P. Irrigation). Evidently, the matter needs further thought to evolve suitable amendments to the existing provisions of the Act and Rules to achieve the desired results in the field.

3.13. In Bihar three Irrigation Acts, viz., Bengal Irrigation Act of 1876, the Bihar Private Irrigation Act of 1922 and the Bihar Public Irrigation & Drainage Works Act of 1947 are in force. The latter two Acts do not appear to have any provisions for the construction and maintenance of water courses. However, according to the Bihar Panchayati Raj (amendment and Validity) Act 1959 Gram Panchayats will be responsible for the construction and maintenance of water courses and field channels etc. But so far this provision does not seem to have any appreciable application at site.

3.14. The Bengal Irrigation Act, under sections 47 to 73 has, however, some provisions on the matter. But they are operative only when a beneficiary or majority of the beneficiaries apply for a certain water course to be constructed.

3.15. The Act thus appears to need amendment to enable irrigation officers to take initiative in the matter in order to improve utilisation and stop wasteful use of water. From the literature received so far, the State does not seem to have moved much in the matter. The point needs to be discussed and gone into further detail with the State authorities.

3.16. For Madras no Irrigation Act from the State authorities has yet been received. They intimated that the prevailing practices and procedures will be explained to the team at the time of its visit to the State. "Madras Irrigation Works (Construction of Field Bothies) Act 1959" however provides for construction and maintenance of water courses and field channels. According to this Act District Collector can ask owners to construct field-bothies and in case of their failure to do so can get them constructed and can recover the cost from them. Anybody interfering with water flowing in a field-bothy can be punished heavily.

3.17. In Madras State they have different rules for different canal systems. On Lower Bhawani, while making utilisation

studies on the project, the team had observed that water courses locally known as 'field-bothies' were constructed at project cost up to 50 acres ayacut. Further extension up to an ayacut of 25 acres was done by the 'ryots' themselves but land for these extensions was acquired at Government cost. Field-bothies beyond 25 acres ayacut was the entire responsibility of the 'ryots'.

3.18. The procedure laid out in the above quoted 1959 Act, though quite comprehensive, does not contain any provision for expeditious construction of field-bothies. It appears, the usual land acquisition procedures will have to be followed resulting in abnormal delays. The actual effect of this act in the field is not known. The point, therefore, needs further study and field visits before the team could express more definite views on the issue.

3.19. In Maharashtra three Irrigation Acts viz., Bombay Act VII of 1879, the C.P. Act III of 1931 and Hyderabad Act XXIV of 1357F are in force in the three regions of the State. All the three Acts had provisions for the construction and maintenance of water courses. But, there was no provision for their compulsory construction.

3.20. Recently Maharashtra Act No. XLVII of 1965 (assented to by the President on 19th November, 1965) has been enacted to provide for the compulsory construction of water courses under the three Irrigation Acts in force in the State.

3.21. But before preparing any scheme for the compulsory construction of water courses, written consent of at least 51% of the holders of land in the area is to be obtained. The procedure outlined in the Act is comprehensive but appears to be quite long drawn out one.

3.22. It is not certain if on actual application in the field, it will help much in expeditious construction of water courses and thereby to speedy development. The matter needs to be discussed with the local authorities and the actual application of these recent amendments of the Irrigation Acts is to be studied at site to consider if any further amendment was necessary.

3.23. In some other States e.g., Gujarat, Madhya Pradesh, Orissa and Andhra Pradesh etc. recently some legislative provisions appear to have been made in this respect. These amendments have yet to be studied to see what further amendments, if any, may be desirable. The West Bengal Government appears to be against enforcing the obligation for construction and maintenance of field channels on beneficiaries.

3.24. Recently Mysore has enacted its new Irrigation Act known as "The Mysore Irrigation Act, 1965" (assented to by the President on 23-7-1965) after repealing the old Irrigation Acts (viz., Mysore Irrigation Act, 1932, Hyderabad Irrigation Act, 1357F, the Bombay Irrigation Act, 1879, the Madras Irrigation Tanks (Improvement) Act, 1949, the Madras Irrigation Works Act, 1943 and the Mysore Tank Panchayat Act, 1922) which were in force in various parts of this State.

3.25. Provisions for field channels under sections 15 to 26 in Chapter III of this new Mysore Act, are quite comprehensive and seem to contain many of the good points from the various Irrigation Acts existing for different States in the country. They along with, the recent amendments in Uttar Pradesh, Punjab and Maharashtra could form basis for model provisions in the Irrigation Acts and Rules thereunder regarding the construction and maintenance of water courses. These could be drafted more effectively after going into actual application of certain of the existing provisions in the Acts and Rules in various States.

3.26. The matter is, however, of primary importance in the development of irrigation and optimum use of water. With the introduction of lift-cum-flow irrigation being advocated in Bombay and elsewhere the question of construction of water courses and their satisfactory maintenance assumes enhanced importance needing detailed thinking, so that provisions in the Acts and Codes become effective as early as possible.

3.27. Water courses and field channels, in fact, form the most important link between canals and field management of irrigation supplies. These at present, by and large, occupy an insignificant place in irrigational set up in most of our irrigation works. Increased attention to this important aspect cannot be over-emphasised. Persuasive action generally adopted can be made more effective, if it is provided with adequate statutory backing as well.

CHAPTER IV

DRAINAGE AND PREVENTION OF WATER-LOGGING AND SALINATION

4.1. Proper drainage of land is as important from agriculture point of view as irrigation. If water collected in the fields due to natural precipitation remains standing for a long time, it is injurious to the crops. Similarly if sub-soil water level rises up to the root zone of the plants or above, it is harmful to plant growth.

4.2. Artificial irrigation can be helpful only if proper arrangement for drainage of the land is provided for and if measures are taken to ensure that subsequent to application of irrigation, sub-soil water level does not rise up to the rootzone of the plants. When this takes place, it is called water-logging. One natural consequence of water-logging is salination, which renders the land unfit for cultivation.

4.3. Most of the Irrigation Acts have provisions empowering State Governments to notify particular reaches of rivers, streams, drainage channels etc. prohibiting putting-in of obstruction therein.

4.4. For example, sections 55 and 56 of the Northern India Canal and Drainage Act of 1873, which deal with the aspect provide that:—

“Section 55: Whenever it appears to the State Government that injury to any land or the public health or public convenience has arisen or may arise from the obstruction of any river, stream or drainage channel, such State Government may, by notification, published in the official Gazette prohibit within limits to be defined in such notification, the formation of any obstruction or may, within such limits, order the removal or other modification to such obstruction.”

“Section 56: The Divisional Canal Officer, or other person authorised by the State Government in that behalf, may, after such publication issue an order to the person causing or having control over any such obstruction to remove or modify the same within a time to be fixed in the order.

If, within the time so fixed, such person does not comply with the order, the said canal officer may himself remove or modify the obstruction, and if the person to whom the order was issued does not, when called

upon, pay the expenses involved in such removal or modification, such expenses shall be recoverable by the Collector from him or his representative in interest as an arrear of land revenue."

4.5. Similar provisions exist in the Bengal Irrigation Act of 1876, the Bombay Irrigation Act of 1879, the C.P. Irrigation Act of 1931, the Orissa Irrigation Act of 1959 and the Mysore Irrigation Act of 1965. In addition to these, however, in the Orissa Irrigation Act of 1959 powers have been given to the Collector or Irrigation Officer, to effect removal of the obstructions even before publication of notification to this effect.

4.6. It would apparently be of advantage if similar provisions are also made in the Irrigation Acts of other States.

4.7. Proper drainage, however, cannot be obtained only by ensuring unrestricted passage of water in rivers, springs or drainage channels. It may seem necessary to construct field drains and drainage channels to accomplish this. Some of the Irrigation Acts made available to the team contain provisions in that direction also.

4.8. The provisions in the Bengal Irrigation Act 1876, the Bengal Development Act of 1935, the Bombay Irrigation Act, 1879 and the Mysore Irrigation Act, 1965 for construction of drainage works are akin to each other. Section 15 of the Bombay Irrigation Act, 1879 reproduced below is typical of similar provisions in other Acts:—

"Whenever it appears to the State Government that any drainage work is necessary for the public health or for the improvement of the proper cultivation or irrigation of any land, or that protection from floods or other accumulations of water, or from erosion by a river is required for any land, the State Government may cause a scheme for such work to be drawn up and carried into execution and the person authorised by the State Government to draw up and execute such scheme may exercise in connection therewith the powers conferred on Canal Officers by Sections 7, 8 and 9 and shall be liable to the obligations imposed upon canal officers by sections 10 and 34."

4.9. No provisions for the construction of drainage works exist in the C.P. Irrigation Act of 1931, the Hyderabad Irrigation Act of 1357 Fasli and the Orissa Irrigation Act, 1959.

4.10. Under the Northern India Canal and Drainage Act of 1873 as applicable to Punjab, the cost of construction of drains is to be shared by the beneficiaries also and the scheme drawn

up by the orders of the State Government is published under Section 57 together with an estimate of its cost and a statement of the proportion of such cost which the State Government proposes to defray and a schedule of the lands which it is proposed to make chargeable in respect of the scheme. In a recent amendment to the Act made in 1965, the procedure for expedient construction of field drains has been outlined in the same way as for the construction of field channels. Sections 59 and 60, which lay down the procedure for fixing the share of beneficiaries and the recovery of the same are as follows:—

“59. (1) The proportion of the cost, other than which is to be defrayed by Government, in respect of such scheme may be charged from the owners of lands made chargeable under section 57 in accordance with rules made by the State Government in this behalf.

(2) An owner shall be competent to contribute towards the charges payable by him either wholly or in part in terms of land, labour or cash in the manner prescribed by rules made in this behalf.

60. Any sum certified by the Divisional Canal Officer to be due under the last preceding section and which remains unpaid after the expiry of the period during which it was payable, shall be recoverable from the owner liable for the same as if it were an arrear of land revenue.”

4.11. Provisions in the Northern India Canal and Drainage Act of 1873 as applicable to Uttar Pradesh are different than those in Punjab discussed in the preceding paragraph. Sections 57 and 58 are same while sections 59 and 60 read as below:—

“59. An annual rate, in respect of such scheme may be charged according to rules to be made by the local Government on the owners of all lands which shall, in the manner prescribed by such rules, be determined to be so chargeable.

Such rate shall be fixed as nearly as possible so as not to exceed either of the following limits:

(1) Six per cent per annum on the first cost of the said works, adding there to the estimated yearly cost of the maintenance and supervision of the same, and deducting therefrom the estimated income, if any, derived from the works excluding the said rate;

(2) In the case of agricultural land, the sum which under the rules then in force for assessment of land revenue, might be assessed on such land on account of the increase in annual value or produce thereof caused by the drainage work.

Such rate may be varied from time to time, within such maximum by the local Government.

So far as any defect to be remedied is due to any canal, watercourses road or other work or obstruction, constructed or caused by the local Government or by any person, a proportionate share of the cost of the drainage work required for the remedy of the said defect shall be borne by such Government or such person as the case may be.

60. Any such drainage rate may be collected and recovered in manner provided by sections 45, 46 and 47 for the collection and recovery of water rates."

4.12. Rules under these sections exist in Punjab which lay down the detailed procedure but no rules exist in Uttar Pradesh. Actually the drains, mostly constructed in Uttar Pradesh are perhaps taken up as entirely State Projects.

4.13. The percentage of irrigated area is highest in the Punjab. This State has also experienced that if sufficient and timely measures are not taken, water-logging usually results in intensely irrigated areas. In other States the percentage of irrigated area is not so high. As new irrigation works are taken up and irrigated area increases water-logging conditions, may develop in other States also. This indicates that effective provisions regarding construction of drains including field drains need to be made in the Acts of other States as well.

4.14. One way to check water-logging may be to develop "lift-cum-flow" irrigation. Wells and tubewells may be provided in the canal irrigated areas and the canal irrigation may be supplemented with well or tubewell irrigation. This may apply to intensively irrigated areas particularly in such a way that the sub-soil water level is maintained at a safe level.

4.15. At present in the Irrigation Acts, there are provisions that if well water is applied to a field which is partly irrigated by canal, the entire field would be assessed with the canal irrigation rates. Such provisions may have to be suitably modified so as to encourage "lift-cum-flow" irrigation.

4.16. A letter was addressed to U.P. State authorities *vide* communication No. COPP/B/IT/66/3769 of 2nd August, 1966 on this subject. The State authorities, however, were unable to appreciate the point fully and the matter needs to be discussed further.

4.17. In many irrigated areas there is not adequate arrangement for flow-off of surplus field water. Field drains therefore,

seem necessary in such cases. Irrigation Acts and Codes are generally silent on this point except in the Punjab where an amendment has recently been made in this respect *vide* Section 57A. It may probably seem advantageous if provision for construction of field drains is made in Irrigation Acts generally on same statutory grounds, as the construction of watercourses.

4.18. Drainage is an important aspect of irrigation. Provisions of Irrigation Codes and Acts have to be more pronounced in this respect than what they are at present. This will require a closer study of this aspect of the problem than what the team could do so far.

4.19. Drainage is also adversely affected sometimes by non-judicious crop planning. A control on crop planning in irrigated areas may have to be introduced to safeguard against development of unhealthy drainage conditions in irrigated areas. The provisions of Irrigation Acts will need to be looked into from that angle.

4.20. Soil and water conservation in irrigated areas also impinge on the efficiency of drainage system, in any catchment. Though soil and water conservancy is generally covered by a separate legislation yet it will be advantageous if some provisions are introduced in the Canal Acts and Codes to enforce provisions of Soil and Water Conservancy Acts, wherever it may seem expedient and necessary to do so.

4.21. One other aspect of sub-soil water conditions is its fall due to overwithdrawal from sub-soil reserves. Statutory provisions may have to be introduced for recharging measures to be taken in vulnerable areas. Irrigation Acts and Codes are at present almost silent on this point. Besides, in some areas, statutory provisions may also have to be made to guard against development of any unwholesome sub-soil water conditions.

4.22. In fact, water laws of the land should invariably include all such aspects. Irrigation Acts and Codes, forming the main content of water laws pertaining to agriculture, necessary additions and amendments therein will have to be made in appropriate chapters and sections.

CHAPTER V

DISTRIBUTION OF WATER AMONG CULTIVATORS SHARING SUPPLY

5.1. The quantum of water let into a watercourse from a canal through an outlet is meant for the entire culturable commanded area on that particular outlet, subject to irrigation intensity and cropping pattern etc. laid out for the tract. Normally the C.C.A. on an outlet ranges between 100 acres and 500 acres (in exceptional cases it may be much smaller or bigger) depending upon the local topography and discharge factor etc., etc.

5.2. The average holdings in most parts of the country being generally about 2 to 5 acres only, there are many co-sharers on an outlet with varying sizes of their holdings. The water allotted to an outlet is to be shared by all the shareholders of the C.C.A. on the outlet. This becomes quite a complicated matter, specially when demand for water is keen and the supply available is restricted both in respect of quantity and duration.

5.3. For the allocation of water supply and its share distribution among the cultivators, there are varying provisions and practices under different Irrigation Acts, Codes and Rules thereunder. They change from State to State depending on local practices, which again vary with the importance of irrigation in each State depending upon local weather and soil conditions etc. and on the patterns of irrigated crops.

5.4. In Northern India *e.g.*, the Punjab, Uttar Pradesh and parts of Rajasthan where generally rainfall is not much and the climatic conditions are such as to necessitate irrigation for almost all crops, water is allocated for the entire culturable commanded area on a canal system, fixing irrigation intensities and the sharing on an outlet amongst the co-sharers is done privately by the beneficiaries themselves. In case of disputes amongst them, any one of the co-sharers, according to provisions in the Northern India Canal and Drainage Act, 1873 could approach the Canal authorities for official apportionment of the supplies amongst the land holders.

5.5. Warabandies in Punjab and Qsrabandi in Uttar Pradesh are framed under these provisions contained in section 68 of the Act and Rules thereunder. Recently the concerned section 68 has been amended *vide* Punjab Act, No. 21 of 1963 to permit the initiative to be taken by the Canal Deputy Collector at his own, also whenever he finds it necessary. They have further laid out procedures by which day and night turns of each shareholder change in alternate years.

5.6. Similar amendments of section 68 in Northern Indian Canal and Drainage Act, as applicable to Uttar Pradesh and the rules and procedure thereunder appears desirable. Some other details of the present procedure laid out for osrabandi framing in Uttar Pradesh, e.g., exclusion of "chahi" and certain other categories of areas from the osrabandies, also appear to need further thought, as they, if applied strictly, may tend to hamper production rather than accelerate it.

5.7. In most other States, e.g., Bihar, West Bengal, Gujarat and parts of Maharashtra etc. water is allocated to individual cultivators for a particular season and crop or for a number of seasons. Sections 74 to 77 of the Bengal Irrigation Act, 1876 and sections 28 to 30 of the Bombay Irrigation Act, 1879 contain provisions to this effect for the supply of water. Every person desiring to have a supply of water from a canal has to submit a written application to that effect to a canal officer and has to enter into an agreement with the Government for the purpose. In these cases the question of sharing water amongst the irrigators on an outlet does not arise as the canal officials become responsible to deliver water to each individual irrigator direct.

5.8. In Vidarbha region of Maharashtra and in Chhattisgarh and adjoining areas of Madhya Pradesh, the C.P. Irrigation Act, III of 1931 is in force. Sections 37 to 44 of the Act and rules thereunder deal with the supply of water on demand and sections 45 to 58 prescribe the procedure for irrigation agreements. According to this Act also water is supplied on demand but instead of each individual irrigator entering into agreement or making a demand application, the joint applications are submitted by the Irrigation Panchayat Sarpanch (Preparing it with the assistance of the *amin*) after taking the signatures or thumb marks of all applicants thereon.

5.9. The agreements are for the irrigation of one or two specified crops, which are called "crops under agreement" and are made with the permanent holders of all irrigable land in a village, *mahal* or *chak*, cultivated with the crops under agreement, provided either permanent holders of not less than two-third of, or not less than 95% of the permanent holders, of all the irrigable land cultivated with crops under agreement, have given their consent to the proposed irrigation agreement, in accordance with the provisions of the Act.

5.10. The distribution of irrigation beyond the outlet is controlled either by an irrigation panchayat constituted in accordance with sections 62 and 93 of the Act, and rules thereunder or by "banihars" selected by the permanent holders.

5.11. The team made at site study of some such Irrigation Panchayat areas in Maharashtra in Bhandara district under command of Ramtek Tank Canals.

5.12. The impression gathered by the team was that the existing Irrigation Panchayats suffer from similar ailments as attend other democratic institutions. The pertaining canal Acts, have, therefore, to enjoin such provisions as will eliminate the ailments as far as possible.

5.13. The concept of irrigation panchayats has, therefore, to be examined in greater detail before it could be recommended for adoption with a view to improve upon the existing systems of field level water management, wherever its possibilities seem feasible.

5.14. The Orissa Irrigation Act, 1959 also contains provisions for the supply of water on demand as those of Bengal Irrigation Act, excepting that no application is necessary for irrigation of the crop or crops for which a compulsory basic water rate is levied by the State Government.

5.15. Under the Bengal Development Act, 1935, also, there are some similar provisions, the area irrigated once under such principal crop, e.g., paddy, is assessed year after year without any further verification or approval while for seasonal rabi crops, an agreement is to be drawn under the Bengal Irrigation Act, 1876.

5.16. The Hyderabad Irrigation Act, 1357F applicable to part of Maharashtra and the Mysore Irrigation Act, 1965 have provisions for the regulation of cultivation on wet lands and supply of water on application for permission to use water for irrigating one or more crops on dry lands.

5.17. The Mysore Irrigation Act, 1965 also gives powers to the Irrigation Officer (with the concurrence of a Committee of non-officials and officials appointed by the State Government) to regulate the kinds of crop that shall be grown on any land under such irrigation work, and the period of sowing and planting such crops.

5.18. Control on crops to be irrigated is also exercised to some extent under the Block-system in vogue on some of the Irrigation works in Maharashtra and Gujarat.

5.19. In Madras, as noticed during utilisation study of Lower Bhavani Project, ayacut of an irrigation work is fixed after taking consent of all the villages in its command and further localisation is done taking the normal quantum of available

supplies into consideration. Internal distribution of water on an outlet is in the hands of revenue authorities who are responsible for assessment. Rules provide for control on cropping pattern also.

5.20. As indicated briefly in the above paragraphs, there are a number of systems of water allocation and its distribution. They vary from State to State and in some cases even from region to region in a single State. Each system has its own advantages. Local conditions and practices appear to have had considerable influence in the original decisions as to which system is applied on any particular irrigation work.

5.21. Now when irrigation is making a headway almost all over the country, it is desirable that relative advantages and disadvantages of all these systems are gone into detail and discussed with progressive irrigators and irrigation, agriculture and revenue authorities in different States to evolve model provisions for the Irrigation Acts of each State so that the existing rigidity prevailing in the practices and the Acts in operation are removed and old prejudices against changes overcome.

5.22. It should be possible to apply any system considered best for any particular irrigation work within the frame work of the Irrigation Act of the State concerned. Allocation and distribution of irrigation water is the basic and most important problem for optimum use of irrigation to accelerate production. It needs thorough investigations, deep thinking and discussions at all levels to draft out model provisions for the irrigation codes under this sub-head.

5.23. Distribution of water among irrigators is provisionally a matter of field water management. It involves dealing with a large number of irrigators. Systems evolved through usage of decades can be changed only through detailed examination of the issues involved along with site inspection of the areas. This, the team, has had no time to go into. The question, however, is important and study may involve looking into field water management practices in progressive countries.

CHAPTER VI

ASSESSMENT AND COLLECTION OF WATER-RATES AND CANAL REVENUES

6.1. The basis and procedure for the assessment and collection of water rates and canal revenues generally vary from State to State all over the country and in some cases it is different for different categories of irrigation works even in the same State.

6.2. In some of the States, *e.g.*, Uttar Pradesh, Punjab and Rajasthan etc. the water rates are charged for actual areas irrigated under different crops (the rates varying with the crops), while in others (*e.g.*, Bihar, Bengal, Maharashtra, Gujarat etc.) the assessment is on the areas and crops entered into agreements for irrigation irrespective of the fact, whether the areas concerned are actually irrigated or not.

6.3. In West Bengal (under Bengal Development Act, 1935) and Orissa there is also another category wherein assessment at a uniform rate is made year after year for the entire area of the command of a work and no fieldwise cropwise irrigation is recorded.

6.4. In Madras and Southern States, there is dry and wet classification of lands. Assessment is cropwise but subject to a certain minimum for the entire ayacut area even for fields which are not actually irrigated.

6.5. In Assam and Himachal Pradesh so far, there is no assessment of water rates.

6.6. Besides water rates there are other special levies also in some of the States, *e.g.*, occupier rate in Punjab, Irrigation Cess in Maharashtra and Gujarat, Improvement Levy in West Bengal, water-cess in Orissa and maintenance cess in Mysore. There are considerable variations in their forms and contents.

6.7. In addition to water rates and other cesses, there is a provision in most of the States to impose a betterment levy on the areas proposed to be benefited from an irrigation scheme. This is meant to cover a portion of the capital expenditure incurred on the scheme and/or part of the rise in value of the land because of the execution of the scheme concerned. It is usually recoverable in instalments spread over a number of years. Necessary legal provisions to impose this levy have either been made in the existing Irrigation Acts or in some cases new separate legislations have been sanctioned for the purpose. But so far

betterment is not being recovered in most of the States, the recoveries being put off for one reason or the other.

6.8. In some States, *e.g.*, Maharashtra and Gujarat the area (within 200 yards) benefited by leakage and percolation from irrigation canals (even those irrigated by private wells within 200 yds. of canals) are liable to assessment of water rates, while there is no such procedure in most of the other States.

6.9. Gujarat State has sanctioned two scales of water rates on its tubewells. One is for permanent irrigators, who enter into agreements and another for casual irrigators, who do not plan ahead for irrigation of their areas. This is a form of two-part tariff scheme. Its actual import on field performance of the areas, where this is applied is still to be studied before firm views could be expressed on this aspect of the problem—more particularly from the point of view of increased agricultural production from the irrigated areas.

6.10. The agencies for the assessment of water rates and the collection of canal revenues also vary from State to State. In some States like Uttar Pradesh and Punjab the assessment is made by the irrigation authorities but the collection is made by the revenue authorities.

6.11. In some others the assessment and the collection both are made by the revenue authorities, *e.g.*, in Madras and West Bengal.

6.12. In other States like Madhya Pradesh and Maharashtra both the assessment and collection are made by the irrigation authorities. Collections are made in some places by *lambardars*, at others by "*kurk-amins*", and at others by irrigation panchayats etc. *Appendix VI* gives the pertaining provisions in some of the Acts.

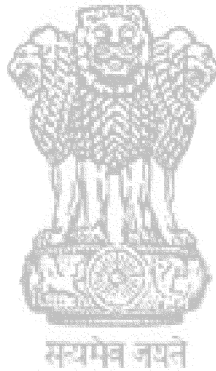
6.13. The numerous variations in the basis of water rate and canal revenue assessments and collection procedures as indicated in above paragraphs show the necessity for detailed study and thought to evolve only one or two such systems which, with some local modifications, could be applied uniformly.

6.14. The procedure and the basis should be such as to encourage optimum use of water and its correct assessment without leaving many loop-holes for concealment of irrigation or over-estimation of irrigated areas. This will need study of different systems at site, discussion of their merits and demerits with the local authorities and progressive cultivators. Provisions in the Irrigation Acts could then be suggested accordingly.

6.15. In practically all the Irrigation Acts of the country there are provisions for assessment of unauthorised use of water

and/or for allowing it to run to waste. The penalty varies from a single or double the ordinary water rate in some States to as much as ten to thirty times the ordinary rates in the case of Mysore State. In Punjab it is six times the ordinary rates. *Appendix VII* gives the pertaining section of Acts etc. and provision of penal clauses.

6.16. The tendency to resort to unauthorised irrigation particularly in times of keen demand (more so in years of drought) is likely to go up with rising prices. This will hamper equitable distribution of the scarce supplies especially in times of keen demand. To prevent unauthorised use of canal waters provision of wholesome penalties may seem necessary. The matter needs discussions with the State authorities to devise provisions (for the canal Acts) which may prevent people from resorting to unlawful acts and unauthorised or wasteful use of water.



CHAPTER VII

SETTLEMENT OF DISPUTES AND MUTUAL RIGHTS AND LIABILITIES OF PERSONS INTERESTED IN WATER-COURSES

7.1. Usually two types of disputes arise between persons interested in a watercourse—one regarding mutual distribution of water amongst the co-sharers and the other regarding ownership and/or alignment, construction and maintenance of a watercourse.

7.2. These disputes very often, especially in tracts where irrigation is needed most, reach serious proportions and lead to bloodshed besides hampering production. In the interest of optimum production and economic use of water available and to maintain law and order it is, therefore, essential that the Canal Acts and Rules thereunder should have ample provisions for expeditious and satisfactory settlement of such disputes, taking the mutual rights and liabilities of persons concerned into consideration.

7.3. The disputes regarding distribution of water amongst co-sharers arise when water is allocated to several of them jointly as under the Northern India Canal and Drainage Act, 1873 or under the C.P. Irrigation Act, III of 1931. This point has been dealt with in paras 5.4 to 5.10 of this report.

7.4. There are adequate provisions under section 68 of the Northern India Canal and Drainage Act, 1873 and the recent amendments to this section introduced in Punjab make them more comprehensive. Section 68 as amended by Punjab now reads as follows:—

“68. (1) The Deputy Collector may, if in his opinion it is necessary so to do, pass an order as to the use or distribution of water from a watercourse amongst persons in any estate or a group of estates or in any holding or a group of holdings in such estate or estates:

Provided that no such order shall be passed by the Deputy Collector without making an enquiry into the matter and without giving a notice to all the persons interested that on a day to be named in such notice, he shall proceed to inquire into the said matter.

(2) Whenever a difference arises between two or more persons in regard to their mutual rights or liabilities in respect of the use, construction or maintenance of a watercourse, any such person may apply in writing to the Deputy Collector stating the matter in dispute.

- (3) On receipt of an application under sub-section (2), the Deputy Collector shall give notice to the other persons interested that, on a day to be named in such notice, he shall proceed to inquire into the said matter, and after the inquiry he shall pass an order thereon.
- (4) An order passed under sub-section (2) or sub-section (3) as to the use or distribution of water for any crop sown or growing at the time when such order is made or with regard to the construction or maintenance of a watercourse shall, subject to an order passed on appeal or revision under sub-sections (5) and (6), be final.
- (5) An appeal shall lie to the Divisional Canal Officer against an order referred to in sub-section (4) within a period of thirty days from the date of such order.
- (6) The Superintending Canal Officer, within whose jurisdiction the watercourse is situated, may *suo motu* or on an application made in this behalf by an aggrieved person, revise an order passed in appeal by a Divisional Canal Officer under sub-section (5):

Provided that no such application shall, lie unless it is made within a period of thirty days from the date of such order.

- (7) No order passed under this section shall be liable to be called in question in any civil court."

7.5. The desirability of having similar procedures in other States needs to be examined, discussed with local authorities and suggestions formulated to achieve some sort of automatic and equitable distribution of water available amongst the co-sharers.

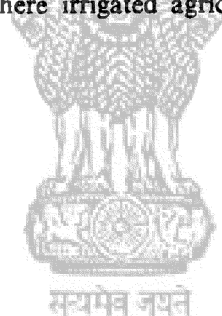
7.6. Similar provisions may be necessary even under other Acts like the Orissa Irrigation Act, 1959 and the Bengal Development Act, 1935, if field to field irrigation is discouraged there and use of watercourses is insisted upon for conveyance of water from outlets to individual holdings.

7.7. In all the old Irrigation Acts of the country there are provisions regarding mutual rights and liabilities of persons interested in watercourses. The most exhaustive and detailed provisions exist in the Bengal Irrigation Act, 1876 (Sections 47 to 73).

7.8. As mentioned in Chapter III, recently Punjab, Uttar Pradesh, Maharashtra and most other States have amended their rules and Acts concerned to provide for expeditious construction of watercourses and for their satisfactory maintenance. They also contain provisions, laying down procedures for settlement of disputes.

7.9. Discussions need to be had with the concerned State authorities in various States to assess the relative advantages of different provisions in different States and to evolve model provisions for expeditious and satisfactory settlement of disputes. At present, in spite of the existing provisions, in many cases the legal procedures followed for settlement of such disputes are long drawn and they linger on for years in one court or the other and in the meanwhile the production suffers badly. The point as such, needs special attention, to ensure that irrigation waters are put to optimum use.

7.10. Disputes take place among co-sharers under many other pretexts. But, they can be dealt with under existing laws in one form or the other. Sharing of water has, however, to be arranged under the provision of irrigation laws—and infringements of such arrangements needs must be dealt with appropriately under canal Acts, Codes, Rules and Regulations. With increasing demand for water, need for such provisions will come up in all State irrigation-served tracts. Advance action needs, therefore, to be planned where irrigated agriculture is to progress.



CHAPTER VIII

AGRICULTURAL ASPECTS OF IRRIGATION CODES

8.1. Irrigation Codes, rules, regulations etc. generally lack concern about development of agriculture in irrigated areas. The result is that there is not that development of scientific agriculture as should follow introduction of irrigation.

8.2. Irrigation rules as laid down generally do not envisage any compulsion on the irrigators to follow improved agricultural practices and scientific crop pattern, with the result that optimum production is not obtained even in irrigated areas. Irrigation Acts, rules and regulations, therefore, need introduction of specific provisions so as to bring about:—

- (a) enforcement, within practicable limits, of scientific crop pattern based on soil characteristics and other climatic features of the area.
- (b) introduction of compulsory inputs like fertilisers, insecticides etc. into irrigated agriculture so that irrigation water is able to yield the best possible results.

8.3. With this end in view special rules may have to be drafted in the chapters pertaining to distribution of water at appropriate levels so that minimum penalty for non-adherence to the set agricultural practices may result in discontinuance of the supplies, if necessary.

8.4. The points dealt with earlier are important from the point of view of optimum utilisation of available irrigation supplies. But, in order to have optimum production per acre-inch of water used in irrigation, it is imperative that improved agriculture practices may be adopted to develop scientific irrigated agriculture.

8.5. Indian farmer, by and large, is conservative. He does not readily take to improved agricultural practices *e.g.*, use of fertilisers, pesticides, weed-killers, good seeds, improved agricultural implements and land preparation etc. He also does not follow scientifically determined crop rotations. As such, propaganda and demonstrations take time in achieving the desired results.

8.6. What appear necessary for enforcing the improved agricultural practices extensively, particularly in irrigated tracts, are suitable provisions in the Irrigation Acts. They should be such that irrigators not adopting scientific agricultural practices could be penalised either through enhanced irrigation rates and/

or by refusal of water supply as a last resort. This all requires statutory backing and State Governments may have to seek such powers from respective legislatures.

8.7. Bombay Irrigation Act, *vide* its section 28 and rules 8 and 11 (reproduced below), has already got a few provisions regarding land preparation etc. which prohibit wasteful use of water.

"Section 28. The supply of water to any watercourse or to any person who is entitled to such supply shall not be stopped except—

* * * * *

(d) whenever and so long as it may be necessary to do so in order to prevent the wastage or misuse of water:

* * * * *

Rule 8.—(1) The Executive Engineer may reject the application for a supply of water or sanction the supply applied for wholly or in part or with modifications.

(2) Subject to such orders as the State Government may from time to time issue, the Executive Engineer may refuse to sanction a supply of water for irrigation to any land under any of the forms prescribed in sub-rule (3) of rule 4 if such irrigation would, in his opinion lead to excessive or wasteful use of water, or cause loss or injury to the cultivator of any other land or be likely to produce conditions dangerous to public health.

Rule 11.—Construction and maintenance of bunds and demarcation and preparation of land.—(1) In each separate area of which sanctions have been obtained—

(i) the portion under irrigation shall, throughout the period of irrigation, be completely surrounded by bunds not less than 1 foot high and of 1 foot top width and shall be formed into suitable plots; and

(ii) each plot shall be completely surrounded by bunds in accordance with the following provisions, namely:—

(a) Round each separate and continuous area on which sugarcane is under cultivation bunds not less than $1\frac{1}{2}$ feet high by $1\frac{1}{2}$ feet top width shall be constructed: Provided that if, on account of the slope of the land and the total area included within the outer bund the Executive Engineer directs that the bund at the lower end of the area and on each side for a distance up to 66 feet from the lower bund shall be of two feet top width such direction shall be complied with:

Provided further that for similar reasons the Executive Engineer may allow the bund at the upper end of a sloping field to be of smaller dimensions.

- (b) Round each plot in an area on which sugarcane is under cultivation bunds not less than 9 inches high by 1 foot top width, shall be constructed: Provided that when the Executive Engineer is satisfied that on account of the configuration of the land and the manner in which it has been repaired and levelled, bunds of these dimensions are unnecessary, he may permit the construction of bunds of such smaller dimensions as he may consider adequate.
- (c) Round each plot in which any other crop, except long term fruit trees (when each tree is separately irrigated) or kharif crop, is under cultivation bunds not less than 6 inches high by 9 inches top width shall be constructed.
- (d) All bunds shall have slopes on both sides of 1 to 1.
- (e) On any common boundary between two areas irrigated under separate sanctions two separate bunds need not be maintained.
- (f) When any special conditions are prescribed in any sanction given for the irrigation of any land, such land shall be demarcated and prepared in accordance with such prescribed conditions, and the provisions of this sub-rule shall not apply thereto.

(2) The Executive Engineer may withhold the first supply of water to any area in which the provisions of sub-rule (1) are not complied with.

(3) The application of water to land which is not prepared and maintained in accordance with sub-rule (1) shall constitute misuse of water within the meaning of clause (d) of section 28."

8.8. These and other suitable provisions to include various modern scientific agricultural practices suited to the local conditions in a State could be included in the provisions under advice by its Agriculture Department. A model draft for these provisions needs to be prepared in consultation with the agricultural experts and progressive cultivators in different States.

CHAPTER IX

MODIFICATIONS OF EXISTING IRRIGATION ACTS

9.1. Modification of the existing Codes and other provisions with a view to ensuring optimum utilisation of available supplies and adoption of improved agricultural practices and development of scientific agriculture is a process involving implication of very many governmental disciplines.

9.2. After clearance of technicalities of the suggested modifications through technical departments of the States concerned in concurrence with the ministries dealing with irrigation and agriculture in the Centre, a general acceptance of the underlying content thereof will have to be sought from the State Governments concerned.

9.3. Thereafter, recommendations will have to be drafted with assistance of legal experts so as to fall in the pattern of amendments to the existing Codes and other provisions.

9.4. Such draft recommendations may then have to be processed through usual governmental channels so as to be presented to the concerned legislatures of the States and got passed.

9.5. At the same time, rules may also have to be drawn out so as to ensure speedy implementation of the passed modifications so that the advantages intended to be derived from them are not delayed.

9.6. Other incidental modifications to Irrigation Acts, rules and regulations may impinge on provisions of other Codes and laws, as prove ancillary to the development of scientific irrigated agriculture.

9.7. The Team has had no occasion to go into these problems in detail as may seem obviously inescapable in the task of recommending modifications in the existing irrigation codes and other provisions. The questions raised will pose problems of different dimensions and in varying activities of human development.

9.8. All this will involve high level participation of many associated disciplines of irrigation and will eventually need a close study of the problems at field level, which in vastly varying regions of Indian Sub-continent, is time-consuming task.

9.9. Nevertheless, it seems essential at this stage of country's development, because field use of irrigation supplies, by and large, is poor almost throughout the length and breadth of the country. In semi-humid regions it is the poorest. Possibly mere conservation of moisture in these areas may prove useful for progressing agriculture in those regions, where mostly just one crop is grown at present.

9.10. Statutory provisions in this respect may at places seem to clash with the prevalent policy of land reforms in the country. A balance may, therefore, have to be struck between provisions of social equity among land owners and production of maximum agricultural production from the existing land and water resources.

9.11. For example, a lower limit of land ceiling for irrigated fields than unirrigated fields inhibits development of irrigation even where irrigation facilities exist. An amendment in the land reforms laws may thus become incumbent in the process of development of irrigated agriculture.

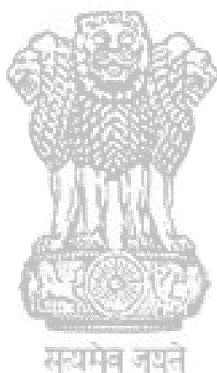
9.12. Strangely enough percentage of double cropping in irrigated areas for the country as a whole is almost at the same level as in unirrigated areas. This percentage stands at a level of about 15 both for irrigated and unirrigated areas taking the country as a whole.

9.13. This signifies that land utilisation pattern has not changed even under irrigated conditions, which it should have. In other words, irrigation has been used mostly for supplemental or increased productive purposes and not for radical growth of production through multiple cropping.

9.14. Amendments in the existing Canal laws, rules and regulations may have to be made so as to help growth of scientifically based multiple cropping in irrigated areas. What will be the pattern of such amendments is a matter of closer study, which the Team had not time enough to go into.

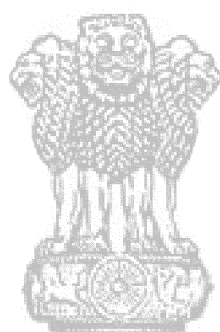
9.15. While other aspects of irrigated agriculture, as get affected by irrigation codes, rules and regulations have been dealt with in foregoing chapters of this interim report, the one pertaining to financial performance of irrigation undertaking has not been dealt with. Though it has a great bearing on productive use of irrigation supplies, yet it is beyond the purview of the terms of reference set out for this study. It has, therefore, not been touched.

9.16. This interim report serves mostly as a pointer towards the scope of the study, as it revealed itself on preliminary examination of different irrigation Acts, Codes, rules and regulations. It may, in course of time, provide a foreground for more intensive and more profitable studies of the problems leading to concrete amendments to the existing irrigation Codes and other provisions so as to ensure optimum utilisation of existing supplies, adoption of improved agricultural practices and development of scientific irrigated agriculture in the country.



APPENDICES

	PAGE
I. Copy of D.O. letter No. 20-43/54-GMF (CO) dated 13-8-65. (Para 1.2)	39
II. Copy of letter No. COPP/Adm./1 (4)/65 dated 18-9-65. (Para 1.3)	40
III. List of literature received from different States. (Para 1.5)	42
IV. Statement showing progress made in different States in amending the Irrigation Acts regarding construction of water courses and field channels. (Para 3.6)	45
V. Extract copy of D.O. No. 3909/IWCA/I-54 dated 29-3-66. (Para 3.12)	47
VI. Statement listing provisions in the Irrigation Codes regarding collection of Canal revenue. (Para 6.12)	49
VII. Statement showing provisions in Irrigation Codes regarding punitive rates for unauthorised use of or wastage of water. (Para 6.15)	50



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APPENDIX I

Copy of D.O. letter No. 20-43/64-GMF(CO) dated 13th August, 1965 from Deputy Secretary, Ministry of F&A, addressed to Secretary, COPP.

This is with reference to the discussion we had in your room on the 28th July, 1965 regarding entrusting the work of revision of Irrigation Codes to the Irrigation Team of the Committee on Plan Projects. It was agreed that the Irrigation Team would take up in hand the work of revising the code. In connection with the enquiries to be addressed to the State Governments about supply of up-to-date information about existing Canal Acts, Codes, Rules and Regulations, etc., you desired that the terms of reference for the team should be communicated early. We have considered the matter regarding terms of reference in consultation with the Ministry of Irrigation and Power.

The broad terms of reference should be as indicated below:

"Examination of the Irrigation Codes in the States from the view-point of modern agricultural practices, availability of supplies (e.g., from storage/diversion works) etc. and making suggestions for—

- (a) Improvement in irrigation management.
- (b) Simplification of the rules of management, etc."

As regards the other details of the above-mentioned broad items, the Ministry of Irrigation and Power has suggested that these may be drawn up by the Team in consultation with the CWPC (Member-WR) as there would be variations in the local irrigation practices and these need to be taken into consideration while drawing up the details. It is felt that the members of the team being senior officers, their experience and background knowledge would be useful in making out the detailed list of items.

I shall be grateful if you could now convey to us the approval of the Planning Commission for entrusting the work relating to the revision of the Irrigation Codes to the Irrigation Team of the COPP.

APPENDIX II

*Copy of letter No. COPP/Adm./I(4)/65 dated 18-9-65
from Secretary COPP to chief Secretaries of all states*

SUBJECT.—Study of Irrigation Codes.

I am directed to say that at the instance of the Agricultural Production Board, it has been decided to organise a study of Irrigation Codes specially from the point of view of promoting modern scientific agriculture. The study will be undertaken by the Irrigation Team of the Committee on Plan Projects, (composition of which is enclosed) in close co-operation with the State Irrigation and Agriculture Departments.

Shri Baleshwar Nath and Dr. Arjan Singh, Members of the Team, will be directly responsible for this study. They will work in close collaboration with the Irrigation Adviser of the Ministry of Food and Agriculture and Member (Water Resources), Central Water & Power Commission, and will also have the benefit of association on the part of an officer of the Law Ministry.

2. The terms of reference of the Study Team will be:

- (a) to review the existing provisions in Irrigation Codes and connected rules and administrative instructions concerning—
 - (i) supply of water and regulation of irrigation in relation to cropping systems,
 - (ii) construction and maintenance of water courses and field channels on irrigation systems,
 - (iii) arrangements for drainage and prevention of waterlogging and salination,
 - (iv) distribution of water among cultivators sharing supply,
 - (v) assessment and collection of water rates and canal revenues, and
 - (vi) existing provisions for settlement of disputes and mutual rights and liabilities of persons interested in water courses; and
- (b) to make recommendations for modifying existing irrigation codes and other provisions with a view to ensuring optimum utilisation of available supplies and adoption of improved agricultural practices and development of scientific agriculture.

3. It is requested that the following material may kindly be furnished for the use of the Team, at an early date—

- (a) Existing Irrigation Codes or Acts.
- (b) Rules and Regulations governing irrigation.
- (c) Departmental standing orders, if any.
- (d) Departmental Manuals governing irrigation.
- (e) Pending legislation, if any.
- (f) Any proposals for amendment to the existing Codes, Rules and Regulations, under consideration of the Government.
- (g) Any other relevant literature.

All correspondence in this connection may please be addressed to—
SHRI B. S. MAL.
 Superintending Engineer,
 Irrigation Team,
 Committee on Plan Projects,
 Link House,
 3, Mathura Road, New Delhi-1.
 An early action is requested.

Composition of the Irrigation Team.

SHRI M. THIRUMALA RAO, M.P.

Leader

SHRI BALESHWAR NATH,
 Chief Engineer.

Member

DR. ARJAN SINGH,

Member

SHRI MAHAVIR PRASAD,
 Irrigation Adviser,
 Ministry of Food and Agriculture,
 Government of India.

Member *Ex-officio*.



APPENDIX III

List of Material received from various States

ANDHRA PRADESH

1. A.P. Land Revenue (Additional Assessment) and Cess Revision Act, 1962.
2. A.P. Land Revenue (Assessment) Act, 1962.
3. A. P. Irrigation and Maintenance of Water Courses Act of 1965.

ASSAM

1. Minor Irrigation Projects (Revised rules and working procedures).

BIHAR

1. Note Volume on Irrigation Schemes in Bihar.
2. Flood Control Schemes.
3. Water resources utilisation in Bihar.
4. Drainage Schemes.
5. Irrigation and Flood Control in Bihar.
6. Rules under the Public Irrigation and Drainage Works Act, 1947.
7. Rules governing the submission of estimates for, and the construction of Irrigation Works, the cost of which exceeds the powers of sanction of Provincial Government.
8. The Bihar and Orissa Private Irrigation Works (Bihar Amendment) Act, 1939.
9. Bihar emergency cultivation & irrigation Act, 1955.
10. The Bihar Public Irrigation & Drainage Works (Validating) Bill, 1949 (as passed by Assembly).
11. Bihar Lok Sinchan Aur Jal Nikas Nirman Niyamavali, 1948.
12. The Bihar Public Irrigation & Drainage Works (Validating) Act, 1954.
13. The Bihar Public Irrigation & Drainage Works (Amendment) Bill, 1962.
14. The Bihar Irrigation Manual Volume II.
15. The Bihar Irrigation Manual Volume III.
16. The Bihar Private Irrigation Works Act, 1922.
17. Bihar Public Irrigation & Drainage Works Act, 1947.
18. Bengal Irrigation Act, 1876.

GUJARAT

1. Bombay Irrigation Act, 1879.
2. Gujarat Canal Rules, 1962.
3. Note on practice of Irrigation and Management of Irrigation Works in Gujarat State.

KERALA

1. Travancore-Cochin Irrigation Act, 1956.
2. T.C. Irrigation (Amendment) Act, 1963.
3. Notification No. 2391-IR4/56/PW, dated 3-4-58.
4. Notification No. 25743-IR4/64/PW, dated 17-11-64.
5. Malabar Irrigation Works Act, 1947.
6. GOM's (Press) No. 18, dated 3-1-51.
7. Madras Irrigation (Voluntary) Cess Act, 1942.
8. Madras Irrigation Cess Act, 1865.
9. Madras Irrigation (Levy of Betterment Contribution) Act, 1955.
10. Revised Lift Irrigation Rules, 1958.

MADHYA PRADESH

1. Gwalior Irrigation Act No. 39 of 1950.
2. Irrigation Manual Gwalior State.
3. Rules under Bhopal State Irrigation Act, 1952.
4. Vindhya Pradesh Water Rates, 1952.

MADRAS

1. Regulation Rules for Reservoirs and Anicuts.
2. Madras Irrigation (Levy of Betterment Contribution) Act, 1955.
3. Bhawani Reservoir (Irrigation Cess) Act, 1933.
4. Madras Irrigation (Tanks Improvement) Act, 1949.
5. Mettur Canal (Irrigation Cess) Act, 1953.
6. Madras Panchayat Act, 1958 (Sections 84 and 85).
7. Madras Irrigation Works (Construction of Field Bothies) Act 1959.
8. Madras Irrigation Cess Act, 1865.
9. Madras Irrigation (Voluntary Cess) Act, 1942.
10. Madras Irrigation Works (Repairs, Improvements and Construction) Act, 1943.
11. Madras Additional Assessment and Additional Water Cess Act, 1963.
12. Madras Land Revenue and Water Cess (Surcharge) Act, 1965.

MAHARASHTRA

1. Bombay Irrigation Act, 1879.
2. Hyderabad Irrigation Act No. 24 of 1357 F.
3. Bombay Canal Rules, 1934.
4. Subsidiary Canal Rules.
5. Maharashtra Act XLVII of 1965.
6. Maharashtra State Irrigation Commission Report, 1962.
7. Resolution No. MIC 1963-13-1(5), dated 30-6-64.
8. Rules under Hyderabad Irrigation Act.

MYSORE

1. Mysore Irrigation Act, 1965.
2. Mysore Irrigation Rules, 1965.
3. Mysore Irrigation (Levy of Betterment Contribution and Water Rate) Act, 1957.
4. Mysore Irrigation (Levy of Water rate) Rules, 1965.

ORISSA

1. Orissa Irrigation Act, 1959.
2. Orissa Irrigation Rules, 1961.
3. Executive instruction to officers *vide* letter No. 8064-R, dated 6-2-44.
4. Technical rules for investigation of irrigation schemes and construction and maintenance of irrigation projects.

PUNJAB

1. Northern India Canal and Drainage Act, 1873 with up-to-date amendments.
2. Punjab Rules under Northern India Canal and Drainage Act, 1873.
3. Punjab State Tubewell Act, 1954.
4. Revenue Manual.

RAJASTHAN

Nil.

UTTAR PRADESH

1. Irrigation Manual of Orders V Edition.
2. Irrigation Manual of Orders Volume II.
3. U.P. State Tubewells Act, 1936.
4. U.R. Extraordinary Gazette 28-2-63.
5. Standing Order No. 18 for Tubewell Operators.
6. Letter No. 7316/I.W. 16B/42/Bandhi, dated 23-10-64.
7. Letter No. C-42/PAF, dated 4-1-63.
8. Letter No. 5888-IW/II, dated 17-7-65.
9. Letter No. 10059-IW/II, dated September 65.

WEST BENGAL

1. The Bengal Development Act, 1935.
2. Bengal Irrigation Act, 1876.
3. West Bengal Irrigation (Imposition of water rate for DVC Water) Rules, 1959.
4. Rules, Rates and Appendices for supply of water from Harinamuri Khal of the projected Mole Bund Irrigation Scheme in the district of Bankura.
5. The Bengal Embankment Act, 1882.
6. Irrigation and Waterways Department Code Vol. I.
7. Irrigation and Waterways Department Code Vol. II.

PONDICHERRY AND KARAIKAL

1. Copy of the Government of French Settlement in India Order, dated 14-6-11.
2. Rules regarding distribution of water in Pondicherry.

APPENDIX IV

*Statement showing progress made in different States in amending the
Irrigation Acts regarding construction of watercourses
and field channels*

S. No.	Name of State	Present Position
1.	Punjab	The Northern India Canal and Drainage (amendment) Act No. 23 of 1965 provides for the construction and maintenance of watercourses and field channels.
2.	Uttar Pradesh	The Northern India Canal and Drainage Act 1873 has since been amended in this respect by U.P. Act V of 1963. The draft rules under this amendment are pending approval of the Government.
3.	Rajasthan	Rajasthan Irrigation and Drainage Act No. XXI of 1954 envisages watercourses as responsibility of the beneficiaries. Later the Rajasthan Irrigation and Drainage (Amendment) Act, 1960 was passed in May, 1960.
4.	Gujarat	An Act amending the Bombay Irrigation Act, 1879 (Gujarat Amendment Act, 1962) in order to provide for expeditious acquisition of land for construction of watercourses by the beneficiaries has been passed by the State Legislature in January, 1963.
5.	Maharashtra	Maharashtra Act No. XLVII of 1965 amending the Bombay Irrigation Act, 1879. The Hyderabad Irrigation Act No. 24 of 1357F and the C.P. Irrigation Act III of 1931 as applicable to the State provides powers to canal officers for taking up schemes for compulsory construction of watercourses.
6.	Andhra Pradesh	Andhra Pradesh Act No. 12 of 1956 has recently been enforced and controls the construction and maintenance of watercourses.
7.	Mysore	The Mysore Irrigation Act, 1965 contains provisions for the construction of field channels.
8.	Madras	The Madras Irrigation Works (Construction of Field Bothies) Act, 1959 provides for construction and maintenance of watercourses and field channels.
9.	Kerala	No Legislation exists. Suitable provisions are being made in the Kerala Irrigation Bill for construction and maintenance of watercourses and field channels.

1	2	3
10. Orissa	. .	The Orissa Irrigation Act, 1959 provides for this.
11. Assam	. .	No Legislation exists. Usual practice is for cultivators to construct field channels themselves.
12. West Bengal	. .	The question had been referred to Ministry of Law as the State Government had informed the Planning Commission that it is not legally valid to enforce the obligation for construction and maintenance of field channels on the beneficiaries.
13. Bihar	. .	There is no Legislation existing. As per Bihar Panchayati Raj (Amendment and Validity) Act, 1959 the construction and maintenance etc. of watercourses and field channels will be the responsibility of Gram Panchayats. Necessary amendment in the relevant State Irrigation Act to ensure proper discharge of the obligation of the beneficiaries has been taken up.
14. Madhya Pradesh		Central Provinces Irrigation Act III of 1931, Section 4 envisages watercourses, as beneficiaries responsibility. Later the Madhya Pradesh Irrigation (Amendment) Act, 1960 was passed on 1-11-1960.
15. Jammu & Kashmir		The Government is empowered to construct watercourses at the expense of the beneficiaries, in case of default.



APPENDIX V

*Extract copy of D. O. No. 3909/IWCA/1-54 dated 29-3-1966 from
Superintending Engineer, Irrigation Works Circle, 9, Kanpur
Road, Allahabad to Superintending Engineer, Irrigation Team,
COPP, Planning Commission*

Kindly refer to your D.O. letter No. COPP/BS/IT/66/3429, dated 19-3-66 in connection with the study of Irrigation Codes.

* * * * *

As regards construction of watercourses it is stated that after the amendment of the Northern India Canal and Drainage Act a Programme for construction of 2063 miles of field channels (watercourses) on Belan Canal System in a period of 3 years was prepared in June, 1963. It was anticipated that out of the above, about 50% of the field channels would be constructed by Gaon Sabhas and the balance 50% would be required to be constructed departmentally. To end of January, 1966 the achievement is 104 miles constructed by Gaon Sabhas or the beneficiaries themselves and 642 miles constructed departmentally. The overall progress in the State in this connection may be obtained from Shri N. K. Agarwala, Personal Assistant (Planning) to Chief Engineer, Irrigation Department, Uttar Pradesh, Lucknow.

A copy of the amended Northern India Canal and Drainage (U.P. Amendment) Act, 1963 must already be in your possession. Originally an Ordinance to amend the Act was issued and the rate of interest on the development charges provided therein was 6%. This was, however, modified to 4½% when the Act was actually passed. I have mentioned this for your information as in the Report on optimum utilisation on Belan and Tons Canal Project by COPP a copy of the Ordinance has been annexed. The following are some of the difficulties experienced in the construction of watercourses under the amended Act:—

(i) The time taken in observing all the formalities provided in the Act takes about 1 year in the implementation of the scheme even when the land is available. To cut short the delays advance action has to be taken without waiting for the time limits prescribed for various actions to be caused under the Act.

(ii) There is a provision under Section 30-C(2)(iii) that the land may be requisitioned. In practice it has been found that the requisitioning authorities did not hand over the possession of the land for long periods. The power to requisition the land vests in Tehsildars. In this particular circle no land could be requisitioned for construction of watercourses, in spite of best efforts. The progress achieved in the construction of field channels was, therefore, by persuasive methods or by irregular methods of encroaching upon the cultivators land without formal requisition or acquisition or their consent in writing so long as there was no opposition.

(iii) Under para 30-C it is the responsibility of the Gaon Sabha to requisition or acquire the land for the construction of the water courses. They have practically no means to prepare the land requisition or acquisition papers. The B.D.Os. or the D.P.Os. who are the controlling authorities of the Gaon Sabhas also could not do anything appreciable in the matter even when the Shajra maps with the area to be acquired marked on them was supplied by the Executive Engineers. The proper procedure would, therefore, be to make the Executive Engineers responsible for getting the land requisitioned or acquired for the construction of the water courses. In order that the results may be achieved quickly the powers to requisition the land may be vested in Executive Engineers in the same manner as they vest in Tehsildars. At present the special land acquisition officers who have been specially appointed to acquire land for Irrigation Department have no powers to requisition the land. They could also expedite the requisition proceedings if they were delegated the powers to requisition the land.

(iv) Difficulty has been experienced in the allocation of cost of construction of water course between the various beneficiaries if an existing water course is merely extended under the amended Act. In such cases it is difficult to define the area benefited precisely.

(v) Under section 36-A provision has been made for recovery of the cost of land at 40 paise per acre per annum and cost of construction at 60 paise per acre per annum. These rates have been found to be very low. If the recovery is extended to a period of 10 years or so the amount to be recovered per year is very low and the share of interest charges become alarming. Further the overhead charges in the recovery of small amounts and in the maintenance of record thereof go out of all proportions to the amount to be realised. The rates should, therefore, be fixed in a manner such that the recovery is completed in a period of about 3 years. The recovery should not be splitted into land and construction cost separately as provided in the Act but may be grouped together both for land and construction cost.

(vi) The procedure for maintenance of records for the recoveries made and watching the recoveries is not defined in the Act. This is an elaborate process and is being detailed in the rules to be framed under section 75 of the amended Act. The Act does not define how the cost of preparation of schemes i.e., expenditure on preparation of schemes i.e., expenditure on preparation of Shajra maps, land acquisition papers, marking alignment at site, purchase of stationery and cost of establishment etc., is to be recovered in case watercourse is constructed by Gaon Sabha itself.

APPENDIX VI

Statement listing the provisions in the Irrigation Codes of various States regarding collection of canal revenue

State	Act	Section of Act & Rules etc.	Provisions
Uttar Pradesh	Northern India Canal & Drainage Act, 1873 and rules thereunder.	Secs. 46, 47 and Rules 34 to 50.	The canal dues are assessed by the Divisional Canal Officers and realised by the Collector, who employs Lambardars on commission basis or Kurkamins on salary basis for collection from individual cultivators and depositing into the Treasury.
Punjab	Do.	Secs. 46, 47 and Rules 67 to 78.	The Canal dues are assessed by the Divisional Canal Officer and realised by the Deputy Commissioner through Lambardars of the villages or through other persons, who are paid commission on percentage basis.
West Bengal and Bihar	Bengal Irrigation Act, 1876	Sec. 82	The Canal dues are assessed by the Canal Officer who may enter into agreement with any person to collect canal dues. The arrears are realised by the collector as arrears of land revenue.
Gujarat & Maharashtra (Bombay region)	Bombay Irrigation Act, 1879	Sec. 57	Water rate shall be payable on due date to the officers determined under the orders of the Commissioner. Any arrears will be recovered as arrears of land revenue by the Collector.
Madhya Pradesh (Mahakoshal) and Maharashtra (Vidarbha)	C. P. Irrigation Act, 1931	Sec. 62	Irrigation Panchayats shall be established for every village, mahal or chak under irrigation agreements, which will collect irrigation revenue and remit it to treasury. Arrears are realised by the Collector as arrears of land revenue.
Orissa	Orissa Irrigation Act 1959	33	The Canal dues are assessed and recovered by the Canal Officer. If the dues are not paid by the prescribed date they will be recoverable with interest at 6% per annum as arrears of land revenue.
Mysore	Mysore Irrigation (Levy of Betterment Contribution & Water Rate) Act, 1957.	10 (3)	Water rate is assessed by the Canal Officer and is realised by the Collector in the same manner as arrears of land revenue.

APPENDIX VII

Statement showing the provisions in the Irrigation Codes of various States regarding punitive rates for unauthorised use or wastage of water

State	Act or Rule	Section etc.	Penalty
Uttar Pradesh	Northern India Canal & Drainage Act, 1873	Sec. 35 and rule 27	Punitive rate equal to ordinary rate in addition to the ordinary rate.
Punjab	Do.	Sec. 35 and rule 32.	Special rate equal to six times in addition to ordinary rate.
Maharashtra	Bombay Canal Rules, 1934	Rule 23	Rate not exceeding treble the ordinary rate in addition to any penalty.
Gujarat	Gujarat Canal Rules, 1962	Rule 23	Do:
Madhya Pradesh	C. P. Irrigation Act, 1931	Sec. 44	At bulk rates to be determined by State Government from time to time.
Orissa	Orissa Irrigation Rules 1961	Rule 47	A rate not exceeding six times the compulsory basic water rate or bulk rate as the case may be.
Mysore	Mysore Irrigation Act, 1965	Sec. 28 (5)	A rate not less than ten times and not exceeding thirty times the rate chargeable for authorised irrigation.

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