

THE REPORT
OF
THE CAUVERY WATER DISPUTES
TRIBUNAL
WITH THE DECISION

**IN THE MATTER OF WATER DISPUTES REGARDING THE INTER-STATE
RIVER CAUVERY
AND
THE RIVER VALLEY THEREOF**

BETWEEN

1. The State of Tamil Nadu
2. The State of Karnataka
3. The State of Kerala
4. The Union Territory of Pondicherry

VOLUME IV

**PRINCIPLES OF APPORTIONMENT
&
ASSESSMENT OF IRRIGATED AREAS IN THE STATES OF
TAMIL NADU AND KARNATAKA**

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Volume IV

**Principles of Apportionment and Assessment of
Irrigated areas in the States of Tamil Nadu and Karnataka****(Issues under Group III)**

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Chapter 1

Principles of Apportionment

The principles of apportionment of waters of inter-State or international rivers like principles of natural justice, have been evolved and developed by different courts from time to time in the course of more than a century while adjudicating the disputes between different States or Nations. When the development of industry and agriculture was not of high magnitude and of intensive nature, there was hardly any occasion for disputes between different States or nations through which any river used to carry water from the source to the sea. Such disputes are directly linked with the development in different spheres and demands for water from such inter-State or international rivers because of the rise in population. For centuries, the rivers are described as blessings, because, they not only provided the water for the fields for irrigation but along their course, cultural, educational, religious institutions have developed apart from they being means of navigation. It is well known that most of the ancient cities and civilizations grew up on the banks of such rivers because of the fertile land and easy communication. But during the middle of 19th century because of the industrial revolution and allied development which brought prosperity to man-kind also gave birth to conflict and dispute in respect of sharing of waters of such inter-State and international rivers. If the history of such disputes in different parts of the world is examined, it will appear that sometimes the upper riparian States have been claiming an absolute right on the flow of water which

used to pass through their territories. In other cases lower riparian States laid claim on the principle of right of easement saying that they have been enjoying the flow of that river for centuries and their economy is heavily dependent on such flows as such there is no question of interrupting the flow of such river by the upper riparian State. This obviously led to disputes and disharmony in respect of sharing of waters by different States and nations and courts were faced with the situation how to strike a balance keeping the interests of all the riparian States. In some cases the matter was not so difficult while arriving at a reasonable and rational basis for sharing the water of an inter-State river because of the volume of the water available in the basin. The only question which was examined and answered was as to which State should get what proportion of water out of the total yield of the river. But the situation becomes grave and acute when the demands of the different States are much higher than the total available water in the basin in question. The river Cauvery and its basin is one such case.

2. From records it shall appear that dispute about sharing of the water of river Cauvery is more than one and a half century old, details whereof have already been mentioned in earlier volumes. Before the Cauvery Fact Finding Committee, in the year 1972, claims had been made by different riparian States for 1260.34 TMC (Ref: TNDC Vol. XV, page 110), whereas the aforesaid Committee as well as this Tribunal on consideration of different material adduced before this Tribunal have estimated the average yield at 50% dependability to be at 740 TMC.

3. Mr Vaidyanathan, learned Senior Counsel, appearing on behalf of the State of Tamil Nadu not only purported to support the claim of Tamil Nadu on the prescriptive right over the flows of river Cauvery but also on the ground that Tamil Nadu being the lower riparian State has a right of prior appropriation of the waters of the river Cauvery even in a proceeding relating to the apportionment of the waters of the said river. In support of the right of prior use first reference was made on behalf of Tamil Nadu to the Report of the Indus Commission of the year 1942 in which the Commission has pointed out that “priority of appropriation gives superiority of right”; in general interest of the entire community inhabiting dry and arid territories; priority may usually have to be given to an earlier irrigation project over a later one. The Commission said at page 36 of its Report as under:-

“the common law rule of riparian rights is completely destructive of equitable apportionment, for, under that rule, the upper owner can hardly take any share-far less his fair share-of the water of the river for purposes of irrigation. Therefore, that rule cannot be applied to an inter-State dispute even where it is recognized by both the States in their own internal disputes. The doctrine of appropriation, on the other hand, is consistent with equitable apportionment, provided that the prior appropriator is not allowed to exceed reasonable requirements. This condition is in fact part of the doctrine as enunciated by the Court in *Wyoming v. Colorado* [1922] (259 U.S. 419, 459) and again in *Arizona v. California* [1936] (298 U.S. 558, 566). Moreover, this doctrine is dictated by considerations of public interest; in arid territories where irrigation is a prime need, there would be no incentive for any

individual or State to spend money upon an irrigation project, unless there was some assurance that it would not be ruined by subsequent diversion higher up the river. Where, therefore, both the States in an inter-State dispute recognize the doctrine of appropriation within their own borders, the most equitable course to apply that same doctrine to the determination of the dispute.”

4. In support of the stand taken on behalf of the state of Tamil Nadu that doctrine of prior appropriation should prevail, while deciding the question of apportionment of the waters of an inter-State or international river, reference was made to the case of State of Wyoming Vs, State of Colorado 259 US 419 (1922) where it was said at page 470 that:-

“The cardinal rule of the doctrine is that priority of appropriation gives superiority of right. Each of these States applies and enforces this rule in her own territory, and it is the one to which intending appropriators naturally would turn for guidance. The principle on which it proceeds is not less applicable to inter-State streams and controversies than to others. Both States pronounce the rule just and reasonable as applied to the natural conditions in that region; and to prevent any departure from it, the people of both incorporated it into their constitutions.”

5. From the aforesaid opinion expressed by the U.S. Supreme Court, it shall appear that both the States had incorporated the rule of priority of appropriation in their Constitution. Apart from that at page 470 itself it was said:

“These considerations persuade us that its application to such a controversy as is here presented cannot be other than eminently just and equitable to all concerned.”

Thus the aforesaid judgement is of not much help to Tamil Nadu because from the facts and circumstances of that case it appears that both States had incorporated such rights of prior appropriation into their Constitutions and at the same time the Supreme Court found it eminently just and equitable to all concerned.

6. The 'right of priority of appropriation' is a concept different from past utilization of waters of the basin by one State or the other. The right of priority of appropriation has been granted in the western States of USA by some statutory provision including incorporation of such rights into the respective Constitution of the States. It will be appropriate to refer to the *Water Law In A Nutshell* third edition by David H Getches Raphael J Moses Professor of Natural Resources Law, University of Colorado School of Law Boulder, Colorado. In Chapter 3 at page 81 it has been said:

"B. Development of Modern Systems

The appropriation system was an expedient means to encourage development of the arid West, where much of the land is distant from streams and water is limited. It rewarded those who first risked their effort and money with security for their investments.

The eight most arid states (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming) constitutionally or statutorily repudiated riparian rights very early and adopted prior appropriation as the sole method of acquiring rights to the use of water for all beneficial purposes. In these states statutory systems have evolved to provide for

initiation of appropriations, establishment and enforcement of priorities, and water distribution.”

Then at page 118 it has been said:

“All modern appropriation systems provide that persons may object to the granting or recognition of a new right by an administrative agency or court on the ground that the right is excessive for the purposes claimed. See Section VIII of this chapter. In addition, junior appropriators may challenge water rights of a senior, claiming that some portion of the rights has been abandoned by lengthy non-use. A state legislature or court presumably could declare that rights in excess of reasonable needs for beneficial uses were not properly granted since private rights depend on water being put to a beneficial use.”

[KR Compilation -S-7]

7. In the *Rocky Mountain Mineral Law Institute Proceedings* of the Twenty-Ninth Annual Institute (July 21, 22, 23, 1983) it has even pointed out:-

“The role of state law in equitable apportionment has been discussed in several cases. When the Court apportioned the Laramie River in *Wyoming v. Colorado*,¹ it concluded that a decree based on the appropriation doctrine rule that priority in time gives superiority in right would be just and equitable, since both states used that rule internally”.

It was further said:

“Subsequently when the Court apportioned the North Platte River in *Nebraska v. Wyoming*²⁴ it expressly departed from the

1 259 U.S.419 (1922)

24. 325 UAS 589 (1945)

priority rule, even though two of the contesting states used the appropriation doctrine internally.....”. [KR Compilation - S-3]

8. The Supreme Court of United States, in the aforesaid case of State of Nebraska Vs State of Wyoming 325 US 589 (1945), after referring to the aforesaid opinion in State of Wyoming Vs, State of Colorado 259 US 419 (1922), in respect of the apportionment of waters in between different states observed at page 618:

“That does not mean that there must be a literal application of the priority rule. We stated in Colorado v. Kansas, 320 US 383, 88 L ed 116, 64 S Ct 176, supra, that in determining whether one State is ‘using, or threatening to use, more than its equitable share of the benefits of a stream, all the factors which create equities in favor of one State or the other must be weighed as of the date when the controversy is mooted.’ 320 US p.394. That case did not involve a controversy between two appropriation States. But if an allocation between appropriation States is to be just and equitable, strict adherence to the priority rule may not be possible.”

[Emphasis supplied]

It was said at the same page:

“Priority of appropriation is the guiding principle. But physical and climatic conditions, the consumptive use of water in the several sections of the river, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas, the damage to upstream areas as compared to the benefits to downstream areas if a limitation is imposed on the former - these are all relevant factors. They are merely an illustrative, not an exhaustive catalogue. They indicate the

nature of the problem of apportionment and the delicate adjustment of interests which must be made.”

9. The right of prior appropriation as existed in some of the Western States of USA cannot be equated with the past utilization of waters of the basin including existing utilization by one State or other in the inter-State basin. Past utilization or existing utilization has been recognized as a relevant factor in a proceeding for apportionment of waters of an inter-State or international river. It has its origin in point of a time, as to which of the State started the utilization first. The past utilization, which is also some time described as prior utilization, is a part of evolution and development of river basin linked with the history of the basin. As such the courts from time to time have taken that fact as a relevant factor while apportioning the water of an inter-State basin. But at the same time they have pointed out that some circumstances prevailing in the other riparian States may outweigh the prevailing practice and in that event such practice or use can be restricted or modified in a reasonable manner.
10. Our attention was also drawn to the report of the Krishna Water Disputes Tribunal, Chapter XII, page 98 under heading Protection of Existing uses. Under the said chapter, it has been stated:-

“Meaning of protection: The term “protection” as used in the issues, agreed statements and this judgement must be understood to mean that, in allocating the water, certain existing uses for which protection is claimed and granted should be preferred to contemplated uses. In fixing the equitable shares of the States, the claims of such existing uses should be allowed before claims for future uses are

taken up for consideration. It is not intended that the existing uses must continue or that they should not be changed in future.

All projects whether protected or not will get such supply as will be available to them under the final scheme of allocation. It is not intended that simply because a project is protected, it will get full and timely supply on a daily or weekly basis in priority to any other project.”

It was also pointed out at page 99 in the said Report that:

“While priority of appropriation is the guiding rule, it is not conclusive in equitable allocation. In *Nebraska v. Wyoming*⁷ the junior uses of Colorado were allowed to prevail over the senior uses of Nebraska having regard to Colorado’s countervailing equities and established economy based on existing uses of the water.”

11. In Chapter XI, the KWDT at page 94 while dealing with the Law relating to equitable apportionment of the waters of an inter-State river have mentioned as under:

“Existing use of a State is important evidence of its needs. Demands for potential uses are capable of indefinite expansion⁽²⁵⁾. Equitable apportionment can take into account only such requirements for prospective uses as are reasonable having regard to the available supply and the needs of the other States⁽²⁶⁾.”

⁷ 325 U.S. pp.585,618,621-622. (25) J. Herschleifer, J. C. De Haven J. W. Milliman, *Water Supply (Economics, Technology and Policy)*, pp.35-36. (26) W. L. Griffin, *The Uses of Waters of International Drainage Basins under Customary International Law*, *The American Journal of International Law* Vol.53 (1959) p. 50,78 (possible future development in the light of what is reasonable use of the water by each riparian).

12. It will be appropriate to mention that the total yield of Krishna river was much in excess to that of yield of Cauvery river and from the Report of the Tribunal it shall appear that on many claims the decision proceeded on agreement between different riparian States.

13. The Narmada Water Disputes Tribunal in its Report under Chapter VIII has discussed in detail, the law relating to equitable apportionment of the waters of inter-State rivers in India. Under the heading 'Relevant Factors in the Balancing Process', at page 128, it was said:

“In the application of the balancing process to any particular case, it may be relevant to consider the nature of the land along the banks of the river, the extent of the dependence of the riparians on the river's flow, the volume of diversion¹⁰ the size of the river's watershed or drainage area and the possibility of maintaining a sustained flow through the controlled use of flood waters¹¹. Of course, an emergency may require special consideration and extraordinary measures for its duration¹². There are numerous other factors: *inter alia* the quality of the waters after use by the upper riparian, the seasonal variations in diversions, the contribution of water by each riparian, the availability of storage facilities or the ability to construct them, the availability of other resources, the extent to which water is or could be returned to the river after use (return flow), and the suitability of the water for the purpose desired¹³.”

At page 131 of the Report, it was said:

¹⁰ Where the total diversion approximated 2 percent of the water at the state line and 94 percent of the diversion occurred when the river at its height, the Court found no appreciable injury to the lower riparian.

¹¹ *Kansas v Colorado*, 185 U.S. 125, 147 (1902). ¹² *Connecticut v. Massachusetts*, 282 U.S.660 (1931)
¹³ See *Smith, The Chicago Diversion*, 10 B.Y.I.L.144, 155 (1929), where the author considers necessity justification, not and material injury in determining whether the diversion was lawful.

“The doctrine of “Equitable Apportionment” cannot therefore be put in the narrow straight jacket of a fixed formula. In determining the just and reasonable share of the interested States, regard must be paid in the first instance to whatever agreements, judicial decisions, awards and customs are binding upon the parties. As to any supplies not controlled by these factors, the allocation may be made according to the relative economic and social needs of the interested States. The other matter to be considered include the volume of the stream, the water uses already being made by the States concerned, the respective areas of land yet to be watered, the physical and climatic characteristics of the States, the relative productivity of land in the States, the Statewise drainage, the population dependent on the water supply and the degree of their dependence, alternative means of satisfying the needs, the amount of water which each State contributes to the Inter-State stream, extent of evaporation in each State, and the avoidance of unnecessary waste in the utilization of the water by the concerned States. ”

Then at page 133, it was said:

“The principle of equitable utilization is truly speaking, one aspect of the application of the principle of equality of right of different States.”

It was also said at page 157 that:

“... the factors to be taken into account for apportionment of the waters are (1) examination of the economic and social needs of the co-riparian States by an objective consideration of various factors and conflicting elements relevant to their use of the waters. (2) distribution of the waters among the co-riparian in such a manner as to satisfy the needs to the

greatest possible extent. (3) accomplishment of the distribution of the waters by achieving the maximum benefit for the each co-riparian consistent with the minimum of detriment to each.”

14. From the Report of the Godavari Water Disputes Tribunal, it shall appear that in respect of the law of equitable apportionment, it has been observed at page 19 of Chapter IV as under:

“In the absence of legislation, agreement, award or decree, the Tribunal has to decide the dispute in such a way as will recognize the equal rights of the contending States and at the same time establish justice between them. Equal right does not mean an equal division of the water. It means an equitable apportionment of the benefits of the river, each unit getting a fair share.”

15. In the Report of The Ravi Beas Waters Tribunal, in respect of claims of riparian States of an inter-State river it has been observed at page 94 as under:

“There is another reason which also militates against the view of the State owning proprietary rights in river waters. Even in ancient times flowing water was assimilated to the air and the sea. As a commodity it was common to all. A river was *res publica iure gentium*, open to navigation and fishing to all citizens. It was only feudal Lords who perhaps claimed absolute property rights over that part of the stream which crossed their territories. There is nothing in law for any one including the State to claim absolute proprietary rights in river waters. Running water has, therefore, rightly been called ‘a negative community’ as it belongs to no one and is not susceptible to absolute ownership rights. The only right which

a State can legitimately claim in river waters flowing within its territory is the right to make use thereof provided such use does not affect adversely the right which another State has to make use of the said waters.”

16. There are three different views in respect of the claims by different riparian States regarding sharing of the water of an inter-State river or a river passing from one nation to another:

(i) The first view proceeds on what is called the doctrine of absolute territorial sovereignty commonly referred to as ‘Harmon doctrine’. According to this doctrine every State is sovereign and has right to do whatever it likes with the waters within its territorial jurisdiction irrespective of injury that it might cause to the neighbouring State by such appropriation and diversion.

(ii) The second view is based on the stand that lower riparian State is entitled to water in its natural flow without any diminution or interference or alteration in its character.

During the last century both views had been propounded – the first one by the upper riparian State and the second by the lower riparian State. If it is examined by an example, a State which is at the head of the river from which the river initially passes then such State can utilize and divert the water from the said river making the lower riparian State starve, leading to the break-down of the economy of such lower riparian State. Similarly, if the second view is pushed to its logical end, then the upper riparian State although may be in dire need of the water of such inter-State river for agriculture and other use shall be a mute spectator of the

water of such inter-State river flowing from its territory to the lower riparian State.

(iii) The third view is based on the principle of “equitable apportionment”, that is to say that every riparian State is entitled to a fair share of the water of an inter-State river according to its need. Such a river has been provided by nature for common benefit of the community as a whole through whose territories it flows, even though those territories may be divided by political frontiers.

17. In one of the earliest cases, in which the Supreme Court of United States had to consider this question is *Kansas vs. Colorado* {206 U.S.46 (1906)} where it was said :

“One cardinal rule, underlying all the relations of the States to each other, is that of equality of right. Each state stands on the same level with all the rest. It can impose its own legislation on no one of the others, and is bound to yield its own views to none. Yet, whenever, as in the case of *Missouri v. Illinois*, supra, the action of one State reaches, through the agency of natural laws into the territory of another State, “the question of the extent and the limitations of the rights of the two States becomes a matter of justiciable dispute between them, and this court is called upon to settle that dispute in such a way as will recognize the equal rights of both and at the same time establish justice between them.....”

“The right to flowing water is now well settled to be a right incident to property in the land; it is a right *publici juris*, of such character that, whilst it is common and equal to all through whose land it runs, and no one can obstruct or divert it, yet, as one of the beneficial gifts of Providence, each proprietor has a right to a just and reasonable use of it, as it passes through

his land; and so long as it is not wholly obstructed or diverted, or no larger appropriation of the water running through it is made than a just and reasonable use, it cannot be said to be wrongful or injurious to a proprietor lower down.....”

“The right to the use of flowing water is *publici juris*, and common to all the riparian proprietors; it is not an absolute and exclusive right to all the water flowing past their land, so that any obstruction would give a cause of action; but it is a right to the flow and enjoyment of the water, subject to a similar right in all the proprietors, to the reasonable enjoyment of the same gift of Providence. It is, therefore, only for an abstraction and deprivation of this common benefit, or for an unreasonable and unauthorized use of it, that an action will lie.”

18. Again in the case of *Colorado vs Kansas* (320 US 383 = 88 L ed.116) in the year 1943 the same principle was reiterated saying:

“The lower State is not entitled to have the stream flow as it would in nature regardless of need or use. If, then, the upper State is devoting the water to a beneficial use, the question to be decided, in the light of existing conditions in both States, is whether, and to what extent, her action injures the lower State and her citizens by depriving them of a like, or an equally valuable, beneficial use.”

19. In the case of *State of New Jersey vs. State of New York* (283 U.S.336) it was said by Supreme Court of United States:

“A river is more than an amenity, it is a treasure. It offers a necessity of life that must be rationed among those who have power over it. New York has the physical power to cut off all the water within its jurisdiction. But clearly the exercise of such a power to the destruction of the interest of lower

States could not be tolerated. And on the other hand equally little could New Jersey be permitted to require New York to give up its power altogether in order that the river might come down to it undiminished. Both States have real and substantial interests in the River that must be reconciled as best they may be. The different traditions and practices in different parts of the country may lead to varying results but the effort always is to secure an equitable apportionment without quibbling over formulas.....”

20. In *State of Connecticut vs. Commonwealth of Massachusetts* {282 U.S.660} (1931) it was said:

“For the decision of suits between States, federal, States and international law is considered and applied by this court as the exigencies of the particular case may require. The determination of the relative rights of contending States in respect of the use of streams flowing through them does not depend upon the same considerations and is not governed by the same rules of law that are applied in such States for the solution of similar questions of private right. *Kansas v. Colorado*, 185 U.S. 125, 146, 46 L. ed. 838, 846, 22 S. Ct. 552. And, while the municipal law relating to like questions between individuals is to be taken into account, it is not to be deemed to have controlling weight. As was shown in *Kansas v. Colorado*, 206 U.S. 46, 100, 51 L. ed. 956, 975, 27 S. Ct. 655, such disputes are to be settled on the basis of equality of right. But this is not to say that there must be an equal division of the waters of an interstate stream among the States through which it flows. It means that the principles of right and equity shall be applied having regard to the “equal level or plane on which all the States stand, in point of power and right, under our constitutional system,” and that,

upon a consideration of the pertinent laws (671) of the contending States and all other relevant facts, this court will determine what is an equitable apportionment of the use of such waters.....”

21. Same question was considered in *State of Colorado vs State of New Mexico*, by the US Supreme Court 459 [US 176 (1982)]. Justice Marshal who delivered the opinion on behalf of the Court said at page 186:

“In addition, we have held that in an equitable apportionment of inter-state waters it is proper to weigh the harms and benefits to competing States. In *Kansas v Colorado*, where we first announced the doctrine of equitable apportionment, we found that users in Kansas were injured by Colorado’s upstream diversions from the Arkansas River. 206 US, at 113-114, 117, 51 L Ed 956, 27 S Ct 655. Yet we declined to grant any relief to Kansas on the ground that the great benefit to Colorado outweighed the detriment to Kansas. *Id.*, at 100-101, 113-114, 117, 51 L Ed 956, 27 S Ct 655. Similarly, in *Nebraska v Wyoming*, we held that water rights in Wyoming and Nebraska, which under State law were senior, had to yield to the “countervailing equities” of an established economy in Colorado even though it was based on junior appropriations. 325 US, at 622, 89 L Ed 1815, 65 S Ct 1332. We noted that the rule of priority should not be strictly applied where it “would work more hardship” on the junior user “than it would bestow benefits” on the senior user *Id.*, at 619, 89 L Ed 1815, 65 S Ct 1332. See also *Washington v Oregon*, *supra*, at 522, 80 L Ed 837, 56 S Ct 540. The same principle is in balancing the benefits of a diversion for proposed uses against the possible harms to existing uses”.

[Emphasis supplied]

22. Chief Justice Burger, in a separate concurring opinion said at page 191:

“I emphasize that under our prior holdings these two States come to the Court on equal footing. See *Kansas v Colorado*, 206 US 46, 51 L Ed 956, 27 S Ct 655 (1907). Neither is entitled to any special priority over the other with respect to use of the water. Colorado cannot divert all of the water it may need or can use simply because the river’s headwaters lie within its borders *Wyoming v Colorado*. 259 US 419, 466, 66 L Ed 999, 42 S Ct 552 (1922). Nor is New Mexico entitled to any particular priority of allocation or undiminished flow simply because of first use. See e.g., *Colorado v Kansas*, 320 US 383, 393, 88 L Ed 116, 64 S Ct 176 (1943). Each state through which rivers pass has a right to the benefit of the water but it is for the Court, as a matter of discretion, to measure their relative rights and obligations and to apportion the available water equitably.”

23. After the remand, the relative claims of the two States were again examined and the matter again came before the US Supreme Court *State of Colorado vs. State of New Mexico* 467 US 310 (1984). At page 323 it was said:

“..... It follows, therefore, that the equitable apportionment of appropriated rights should turn on the benefits, harms, and efficiencies of competing uses,

We continue to believe that the flexible doctrine of equitable apportionment extends to a State’s claim to divert previously appropriated water for future uses. But the State seeking such a diversion bears the burden of proving, by clear and convincing evidence, the existence of certain relevant factors.”

24. It may be pointed out that in the *Colorado v New Mexico* 459 US 176 (1982) known as *Colorado I* as well as in *Colorado v New Mexico* 467 US at 310 (1984) known as *Colorado II* there are explicit indications, to consider future developments in equitably apportioning a fully appropriated river. But it has been pointed out in those opinions that any future developments must not be inherently speculative in nature and assessment is required to be made on the benefits and harms of a future use.

25. It also appears that recent treaty between Canada and the United States with regard to the Columbia basin has discredited Harmon doctrine. Also in other international disputes in respect of sharing of waters of rivers flowing from the territory of one nation to another, treaties have been entered which show that different nations have adjusted their differences. The Indus Treaty 1960, between India and Pakistan is an example.

26. In *Halsbury's Laws of England, Fourth Edition, Volume 49(2)* in paragraph 121 it has been said:

“121. Rights and duties as to quantity of water. The right of a riparian owner to the flow of water is subject to certain qualifications with respect to the quantity of water which he is entitled to receive. The right is subject to the similar rights of other riparian owners on the same stream to the reasonable enjoyment of it, and each riparian owner has a right of action in respect of any unreasonable use of the water by another riparian owner.....

A riparian owner must not use and apply the water so as to cause any material injury or annoyance to his neighbours opposite, above or below him, who have equal rights to the use of the water and an equal duty towards him.”

27. The well known Helsinki Rules of 1966 rejected the Harmon doctrine and laid stress on the need of equitable utilization of such international rivers. In this connection it will be advisable to refer Article IV and V of Helsinki Rules which recognize equitable use of the water by each basin State and mentions the factors which are to be taken into consideration while working out the reasonable and equitable share of the riparian States:

Article IV

“Each basin State is entitled, within its territory to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.

Article V

- I. What is a reasonable and equitable share within the meaning of article IV to be determined in the light of all the relevant factors in each particular case.
- II Relevant factors which are to be considered include, but are not limited to:
 1. The geography of the basin, including in particular the extent of the drainage area in the territory of each basin State;
 2. The hydrology of the basin, including in particular the contribution of water by each basin State;
 3. The climate affecting the basin;
 4. The past utilization of the waters of the basin, including in particular existing utilization;
 5. The economic and social needs of each basin State;

- 6. The population dependent on the waters of the basin in each basin State;
- 7. The comparative costs of alternative means of satisfying the economic and social needs of each basin State;
- 8. The availability of other resources;
- 9. The avoidance of unnecessary waste in the utilization of waters of the basin;
- 10. The practicability of compensation to one or more of the co-basin States as a means of adjusting conflicts among uses;

and

11. The degree to which the needs of a basin State may be satisfied, without causing substantial injury to a co-basin State.

[Emphasis supplied]

III. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is reasonable and equitable share, all relevant factors are to be considered together and a conclusion reached on the whole.

.....”

(Ref: TN Compilation No. VI, pages 37-38)

28. In connection with the present dispute itself after the passing of an interim order on 25th June 1991 by this Tribunal, the Governor of Karnataka on 25th July 1991 promulgated an Ordinance ‘The Karnataka Cauvery Basin Irrigation Protection Ordinance 1991’ purporting to protect the interest of the State of Karnataka and to negate the effect of the aforesaid Interim Order passed by this Tribunal. This led to further controversy. Ultimately on 27th July 1991 the President under Article 143 of the Constitution referred three questions for the opinion to the

Supreme Court. A 5-Judges Bench of the Supreme Court answered the reference on 22nd November 1991 [1993 Supp.(1) SCC 96]. The details of the Ordinance including the order of reference have been extracted in Volume I.

29. Section 3 of the Ordinance vested power in the State Government saying:

“(1) the State Government may abstract or cause to be abstracted, during every water year, such quantity of water as it may deem requisite, from the flows of the Cauvery river and its tributaries, in such manner and during such intervals as the State Government or any officer, not below the rank of an Engineer-in-Chief designated by it, may deem fit and proper.”

30. The effect of the aforesaid provision was that the State of Karnataka claimed exclusive right on the waters of river Cauvery and its tributaries within the territories of Karnataka and purported to negate the interim direction given by this Tribunal in respect of the apportionment of the water during the pendency of the proceedings. The Supreme Court in its opinion said:-

(i) That the said Ordinance was unconstitutional *inter alia* because the State of Karnataka has arrogated to itself the power to decide unilaterally whether the Tribunal has jurisdiction to pass the interim order or not and whether the Order is binding on it or not.

(ii) The State had presumed that till a final order is passed by the Tribunal, the State has the power to appropriate the waters of river Cauvery to itself unmindful of and unconcerned with the consequences of such action on

the lower riparian States. Karnataka has presumed that it has superior rights over the said waters and it can deal with them in any manner. In this process the State of Karnataka has also presumed that the lower riparian States have no equitable rights and it is the sole judge as to the share of the other riparian States in the said waters. It was also pointed out that the Ordinance had an extra-territorial operation in as much as it interfered with the rights of Tamil Nadu and Pondicherry to the waters of the Cauvery River.

31. Thereafter in respect of rights of riparian States over the inter-State river like Cauvery, the Supreme Court said:

“71. It will be pertinent at this stage also to note the true legal position about the inter-State river water and the rights of the riparian States to the same. In *State of Kansas v. State of Colorado* 51-52 L Ed 956, 975: (206) US 46 the Supreme Court of the United States has in this connection observed as follows:

‘One cardinal rule, underlying all the relations of the States to each other, is that of equality of right. Each State stands on the same level with all the rest. It can impose its own legislation on no one of the others, and is bound to yield its own views to none.. the action of one State reaches, through the agency of natural laws, into the territory of another State, the question of the extent and the limitations of the rights of the two States becomes a matter of justiciable dispute between them and this Court is called upon to settle that dispute in such a way as will recognize the equal rights of both and at the same time establish justice between them.’

‘The right to flowing water is now well settled to be a right incident to property in the land; it is right *publici juris*, of such character that, whilst it is common and equal to all through

whose land it runs, and no one can obstruct or divert it, yet, as one of the beneficial gifts of Providence, each proprietor has a right to a just and reasonable use of it, as it passes through his land, and so long as it is not wholly obstructed or diverted, or no larger appropriation of the water running through it is made than a just and reasonable use, it cannot be said to be wrongful or injurious to a proprietor lower down.....’

‘The right to the use of the flowing water is *publici juris*, and common to all the riparian proprietors; it is not an absolute and exclusive right to all the water flowing past their land, so that any obstruction would give a cause of action; but it is a right to the flow and enjoyment of the water, subject to a similar right in all the proprietors, to the reasonable enjoyment of the same gift of Providence. It is, therefore, only for an abstraction and deprivation of this common benefit, or for an unreasonable and unauthorised use of it that an action will lie.’ (Elliot v. Fitchburg, 57 Am Dec.85 at 87, 88)

“72. Though the waters of an inter-State river pass through the territories of the riparian States such waters cannot be said to be located in any one State. They are in a state of flow and no State can claim exclusive ownership of such waters so as to deprive the other States of their equitable share. Hence in respect of such waters, no state can effectively legislate for the use of such waters since its legislative power does not extend beyond its territories. It is further an acknowledged principle of distribution and allocation of waters between the riparian States that the same has to be done on the basis of the equitable share of each State. What the equitable share will be will depend upon the facts of each case. It is against the background of these principles and provisions of law we have already discussed

that we have to examine the respective contentions of the parties.”

[Emphasis supplied]

32. It can be said that in the Presidential reference in connection with the present dispute itself the Supreme Court accepted the view expressed by the Supreme Court of the United States in the aforesaid case of *State of Kansas v. Colorado* {(206) US 46} and reiterated the same law and principles which govern the allocation of equitable water of an inter-State river between the different riparian States. As to what shall be just and equitable share of a particular State in an inter-State river or a river which passes through more than one State, it has to be borne in mind that a State cannot, under colour of that right, or for actual purpose of irrigating its own land, wholly abstract or divert the water course or take such an unreasonable quantity of water or make such unreasonable use of it, as to deprive the other States of the substantial benefits which it might derive from it, if not diverted or used unreasonably. This principle was also taken note of in the aforesaid case of *State of Kansas v. Colorado* {(206) US 46} and it was further added:

“This rule, that no riparian proprietor can wholly abstract or divert a water course, by which it would cease to be a running stream, or use it unreasonably in its passage, and thereby deprive a lower proprietor of a quality of his property deemed in law incidental and beneficial, necessarily flows from the principle that the right to the reasonable and beneficial use of a running stream is common to all the riparian proprietors, and so each is bound so to use his common right as not

essentially to prevent or interfere with an equally beneficial enjoyment of the common right by all the proprietors.”

33. So long as the river flows are not wholly obstructed or diverted, or larger appropriation of the water running through them is made than a just and reasonable use, it cannot be said to be wrongful or injurious to the right of the lower riparian. In other words, equitable apportionment will protect only those rights to the water that are “reasonably required and applied” especially in those cases where water is scarce or limited. There must not be waste of the water of such river which is a ‘treasure’ in a sense. Only diligence and good faith will keep the privilege alive. The wasteful or inefficient uses will not be protected. But this theory of equitable apportionment, pre-supposes equitable and not equal rights. In other words, any order, direction, agreement or treaty has to take into consideration the economic and social needs of different riparian States. To arrive at a finding as to what shall be the equitable apportionment in respect of any particular inter-State or international river is not easy. The problems of each State and river are different and unique and require judicious balancing of conflicting claims in respect of use of the river by different riparian States.

34. In respect of the opinion expressed by our Supreme Court in the aforesaid reference case on the question of principles of equitable apportionment of waters of inter-State river, it was urged on behalf of the State of Tamil Nadu that as that question was not referred by the President for opinion to the Supreme Court, the observations of the

Supreme Court was obiter dictum. From a bare reference to paragraph 38 of the report 1993 Supp (1) SCC 96(II), it shall appear that Tamil Nadu questioned the validity of the Ordinance promulgated by the Karnataka on various grounds including that State of Karnataka had no right to unilaterally decide the quantum of water which the said State will appropriate; the right to just and reasonable use of water being a matter for adjudication by the Tribunal. The stand then taken was that no single State by the use of its legislative power can arrogate unto itself the quantum of water it will use from the inter-State river. Supreme Court in paragraph 70 expressed its opinion that the Inter-State Water Disputes Act 1956 has been enacted under Article 262 of the Constitution and not under Entry 56, as such there was a legislative incompetence on the part of the State of Karnataka, while purporting to enact any such law in respect of an inter-State river. Thereafter in paragraphs 71 and 72, the true legal position about the inter-State river water and the rights of the riparian States to the same has been considered. There is a clear enunciation about the legal position in respect of claims over the waters of an inter-State river. It has been said, as already quoted above, that no State can claim exclusive ownership of such waters so as to deprive the other States of their 'equitable share'. Thereafter, it has been pointed out that it was the acknowledged principles of distribution and allocation of waters between the riparian States that the same has to be done on the basis of equitable share of

each State. In this background the Supreme Court considered the question of equitable apportionment of water in an inter-State river.

35. On behalf of the State of Tamil Nadu emphasis was laid on clause 4 of Article V of the Helsinki Rules 1966 which provides that past utilization of the waters of the basin have to be taken note of. Clause 4 of Article V states that past utilization of the waters of the basin including in particular existing utilization shall be a relevant factor. In view of clause III of Article V clause 4 has to be read with and considered along with other clauses which shall include the economic and social needs of each basin State, the contribution of water by each basin State, the availability of the other resources, the avoidance of unnecessary waste in the utilization of the waters of the basin. Article V (III) is reproduced:

“III. The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is reasonable and equitable share, all relevant factors are to be considered together and a conclusion reached on the whole.”

36. As such while determining the reasonable and equitable share, all relevant factors are to be considered together and a conclusion is to be reached on the whole.

37. It may be pointed out that in the report of the Seventy-First Conference of The International Law Association held in Berlin during 16-21 August, 2004, (Karnataka Compilation S-23) at page 362, relevant factors have been specified which are to be considered while determining an equitable and reasonable use. The factors mentioned in the Helsinki

Rules of 1966 have been retained including the Article V (III) which requires all relevant factors to be considered together and a conclusion to be reached on the basis of the whole. As such on basis of one relevant factor, no right can be claimed by any riparian State in a proceeding for apportionment of just and equitable share of water of an inter-State river.

38. Reference was also made to 'The Campione Consolidation of the ILA Rules on International Water Resources 1966-1999'. In that some clauses have been further added but clause (g) of Article 4 in respect of past utilization of the waters of the basin is identical. Our Supreme Court in the tune of the opinions expressed by the Supreme Court of the United States, has said that it was an acknowledged principle of distribution and allocation of waters between the riparian States that the same has to be done on the basis of equitable share of each State. Thereafter they have added "What the equitable share will be will depend upon the facts of each case."

39. It is no doubt true that prior use has to be given due weight because cultivators have been irrigating their lands in the lower riparian State as in delta in the present case for centuries. But that factor has to be taken into consideration along-with several other factors for purpose of, determination as to what shall be the just and equitable share of Karnataka, Tamil Nadu, Kerala and Union Territory of Pondicherry. Can it be said that in a developing country, especially like India, whenever, the question of apportionment is to be considered in respect of any inter-State river, prior use by one of the riparian State shall be the

only factor for consideration for determination of the share among the different riparian States? The history will bear out that through-out the world the developments have by and large started from the area where big rivers used to meet the seas. They became the centre for growth of civilization which included agriculture, education and later industries etc. Now in this background, will it be just and proper to say that the States which are the upper riparian States and are not so developed with the help of the inter-State rivers which pass through those States later cannot derive benefit of such inter-State rivers for the development of agriculture and other basic needs? This basic question in our view led to the evolvement of the rules of just and equitable apportionment, in which several factors prevailing in different riparian States including the prior use have to be taken into consideration for adjudication of the share of the respective States.

40. While taking into consideration the different aspects for the purpose of allocation of waters, the past utilization is a relevant factor. But the question is whether a State can claim the past utilization as a matter of right irrespective of the need and equitable share of other riparian States? By now it is almost settled that past utilization though a relevant factor but circumstances in other riparian States may be such that their demands for reasonable share may outweigh the past utilization of any particular riparian State and the Courts and Tribunals have ample power taking into consideration overall relevant circumstances to curtail and modify the past uses by any riparian State. Article IV of Helsinki

Rules clearly indicates that 'each basin State is entitled, within its territory to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.'

41. In the present dispute, it is not in controversy that prior to the year 1924 when the aforesaid agreement was entered into between the States of Mysore and Madras, the river Cauvery was in a state of flow, in the sense that whatever water came from the source and tributaries in the State of Mysore and Madras used to pass through delta. The utilization of Cauvery water within the State of Mysore was negligible compared to its utilization in the State of Madras especially in the delta area. The utilization of Cauvery water so far as Kerala is concerned, it was virtually nil. With the constructions of reservoirs, KRS in Mysore and Mettur in Madras, the flow of river Cauvery was regulated to a great extent. The agreement of the year 1924 envisaged and prescribed the limits within which the waters of river Cauvery from Krishnarajasagar reservoir or any new to be built on the tributaries within the State of Mysore were to be utilized. In this background, the main development and utilization of the Cauvery basin before 1924 took place only in Madras mostly in the delta area. The contention of Karnataka is that under the Agreement of 1924 while fixing the limit flows of river Cauvery at upper Anicut vide Rule 7 of Annexure-I of the Agreement a much higher limit was fixed than what was essential and necessary.

42. Tamil Nadu (the then State of Madras) being the lower riparian State has been enjoying almost full flow of river Cauvery as well as its

tributaries in Karnataka (the then State of Mysore) and Tamil Nadu. In the year 1892 an agreement was entered into between the then State of Madras and the State of Mysore in respect of construction of any new irrigation works in Mysore State, details whereof have been discussed and examined in earlier volumes. Then in the year 1924, another agreement was entered into between the two States as already said above with different terms and conditions in respect of construction of reservoirs - Krishnarajasagar (KRS) in Mysore and Mettur in the State of Madras. The terms also stipulated as to how the Mysore shall construct and operate the reservoirs on the tributaries of the river Cauvery so as not to impair the flow and volume of water, going to the Madras territory. It shall be proper to quote the relevant part of Rule 7 of Rules of Regulation in respect of Krishnarajasagara which has already been discussed in detail in earlier Volumes:

“7. The minimum flow of the Cauvery that must be ensured at the Upper Anicut before any impounding is made in the Krishnarajasagara, as connoted by the readings of the Cauvery Dam north gauge, shall be as follows:-

<u>Month</u>	<u>Readings of the Cauvery Dam North guage</u>
June	Six and a half feet
July and August	Seven and a half feet
September	Seven feet
October	Six and a half feet
November	Six feet
December	Three and a half feet
January	Three feet”

[Emphasis supplied]

In the year 1929 obligation of the Mysore to ensure gauge of flow at upper Anicut in different months was converted into cusecs.

43. Under the terms of the agreement after the expiry of the period of 50 years, some of the clauses of the agreement were to be reviewed in the light of past experience. The period of 50 years expired in the year 1974. Till the expiry of the period of 50 years, the terms and conditions of the agreement of the year 1924 were complied with by both the States. From the records including the report submitted by the Cauvery Fact Finding Committee in the year 1972, it appears that Tamil Nadu had been utilizing waters to the tune of 566.60 TMC including uses in Karaikal region of U.T. of Pondicherry, whereas Mysore was utilizing only 176.82 TMC. The State of Kerala was utilizing only about 5 TMC of Cauvery water, although its contribution to the total flow was significant.

44. The stand of Karnataka (the then State of Mysore) is that because of the terms of the agreement specially the Rules of Regulation, as provided in the said agreement in respect of impounding of waters in the KRS, Mysore/Karnataka could not utilize more water although it was required for further development of its agriculture. It was urged on behalf of the State of Karnataka that in the two agreements between the State of Madras and the Government of the then State of Mysore dated 18.2.1892 and 18.2.1924, which have been discussed in detail in Volume II, the State of Madras, as lower riparian State, had put several restrictions in respect of construction of reservoirs and impounding of waters in such reservoirs in different clauses of the agreement. The specific grievance

through out has been made in respect of rule 7 of the Rules of Regulation for KRS Annexure I to the agreement of 1924 which fixed minimum flow to be maintained at the Upper Anicut from seven and a half feet to three feet during the months of June to January before any impounding could be made by Mysore in the Krishnarajasagara. From discussions in respect of the issues under Group I in volume II it shall appear that the State of Madras since long before execution of the agreement was insisting on a particular flow of Cauvery at the Upper Anicut, which was being resisted by State of Mysore. When the dispute was not settled an arbitration proceedings was initiated in the year 1914 in which an award was given by Justice H. R. Griffin. The award given by Justice H.R. Griffin was challenged by State of Madras. In due course it went upto the Secretary of States who set aside the said award with certain directions. Ultimately the State of Mysore entered into a settlement because they were anxious to raise the height of dam of KRS In order to permit the raising of the height of the KRS Rules of Regulations were finalized in the year 1921 which contain the conditions regarding maintaining the flow of river Cauvery at Upper Anicut in terms of rule 7 thereof.

45. It will be relevant to refer to the correspondence dated 6th May 1920 addressed by Mr. Howley, Chief engineer, Madras to Mr. Cadambi Chief engineer, Mysore. Relevant part is as under:

“Although I am anxious to facilitate a satisfactory settlement, I am really unable to advise my Government that the interests of the Madras cultivators would be sufficiently safeguarded by anything less than the limit gauges that I have

proposed to you in my letter of yesterday morning. It is only if these gauges are accepted by you that it would be worth while considering what rules of regulation can be devised to give effect to an agreement on this question. Unless the modified Madras system is adopted, it will apparently be a matter of extreme difficulty to decide upon suitable proportion factors under which we would be free from liability to great loss at times, owing to excessive variation of actual proportion of flow, if the Kannambadi catchment alone is considered. At the same time, if we are sufficiently protected, we shall not object to your having full impounding above a certain limit, as you have at present under Table I.

I must again repeat that we cannot afford to take risks in this matter or to endanger our enormous existing interests merely in order to assist Mysore to evolve a financially attractive project. We do not desire to waste water into the sea, if it can possibly be avoided; but on the other hand we cannot afford to give up existing rights, merely because in the exercise of those rights there must occasionally, under present conditions, be waste of water. If we had a large storage reservoir-which we have not-the case would of course be different and we would be able to manage with a much smaller total discharge at the Cauvery Dam."

(Emphasis supplied)

(Ref: KR Volume No. II Exhibit No.KR-64 Page 295-296)

46. It is contended by Karnataka that before 1924 agreement was executed and entered into between the State of Mysore and the State of Madras, it had been decided that specific provisions were to be made in the said agreement in respect of construction of the Mettur reservoir in Madras and a specific mention was made regarding construction of

Mettur dam in Clause 10 (v) of the agreement, with large storage capacity of 93.5 TMC; still higher gauge limits upto 7.5 ft. were prescribed in Annexure I to the said agreement. In the letter dated 6th May, 1920 aforesaid, it had been said that higher gauge limits were being fixed in absence of a storage reservoir in Madras. In this background it has been submitted by Karnataka that if Mettur reservoir would have been taken note of at the time of the execution of the agreement of the year 1924, then on the stand taken by the State of Madras itself in aforesaid letter dated 6th May, 1920, lower gauge limits should have been fixed and in that event the interests of the State of Madras could have been protected with a smaller total discharge at the Cauvery Dam and that the then state of Mysore in that situation could have impounded more water in KRS than what was permitted.

47. On behalf of State of Karnataka reference was made to the proceedings in connection with the Mysore – Madras Cauvery Arbitration, 1929 under the Chairmanship of Mr Justice A. Page. The dispute was about the interpretation and carrying out of the terms of the aforesaid agreement of the year 1924. From the proceedings of the said arbitration, (Tamil Nadu DC. Volume VI at page 126) it shall appear that the matter which was to be considered by the arbitrators was whether the curve of 10 years' discharges of the gaugings is to be strictly adhered to or not. In the statement of case filed on behalf of the Mysore in the said arbitration proceedings on 25.5.1929 in paragraph 18 it was said:

“18 Even if the basis of the 7½ years’ average is adopted, there will not be sufficient water once in 10 years for irrigating the 1,25,000 acres under the Krishnarajasagara Scheme, while there will be no water available for several years for the irrigation in Mysore of the additional 110,000 acres as contemplated by the agreement. On the other hand, Madras will always get quite a sufficient supply not only for their existing irrigation of nearly 1,250,000 acres, but also for the additional area of 301,000 acres under the Mettur Scheme. If the 10 years’ average is taken as contended by Madras, the Krishnarajasagara scheme will fail very badly in three years out of ten and there will be no water available for additional irrigation which the agreement was intended to secure for Mysore. Madras, on the contrary, will get much more than what they require for their purposes under the agreement, with the result that the surplus water must run to waste to the sea.” [Tamil Nadu DC. Volume VI at page 10]

48. A counter statement was filed on behalf of the State of Madras.

The stand of Madras in paragraph 24 was:

“24. Paragraph 18 of Mysore statement. Even at the time of the construction of the Krishnarajasagara it was realized by both the parties that the securing to Madras of its rights of water might involve Mysore not being able to cultivate the full extent of land referred to in this paragraph. In entering into the agreement of 1924 and in launching upon the construction of the Krishnarajasagara, Mysore took the risk of their not being able to cultivate the full extent of land mentioned in this paragraph. Far from there being any kind of obligation on the part of Madras to secure to Mysore the right to cultivate any definite extent, the rights of Mysore under the agreement are expressly subject to a minimum flow being secured to Madras.

In the case of Madras its extensive and existing rights had to be protected, while in the case of Mysore, its projected scheme was only for prospective irrigation.”

[Emphasis supplied]

[Ref: TNDC Volume VI at page 19]

49. Our attention was drawn to the stand taken by Mr Alladi Krishnaswami Ayyar who appeared for the then State of Madras before the Arbitrators:

“I have already invited your attention to the passage in which it is stated that the question whether the Krishnarajasagara will be a success or not, does not enter as an element in determining the rights of Madras. In fact, the contention of Madras has always been that it was not possible and feasible to work the Krishnarajasagara Project consistently with the rights of Madras.”

Again at page 253, Shri Alladi Krishnaswami Ayyar repeated the same thing:

“One other point will make my position clearer. The object of the 1924, 1921 and 1892 agreements is to secure the rights of Madras. As a matter of fact, a large tract of land was brought under cultivation and rights had been acquired long before this dam was built.”

[Ref: TNDC Vol. VI, page 213 & 253]

50. While summing up the arguments Shri Ayyar on behalf of the State of Madras said:-

“Now, My Lord, in dealing with a case either of frustration or of implied terms, the court must necessarily have regard to the nature of the agreement and to the terms thereof. In this case, serious disputes had arisen over the agreement of 1892 and the rights of Madras under that agreement. Also, in

respect of the rights of Madras as a lower proprietor, Madras claimed the right to withhold altogether its consent to the construction of the Krishnarajasagara. The matters were referred to arbitration. Before the Arbitrator the preferential claim of Madras was admitted by Mysore and in fact in the proceedings the Arbitrator expressly says that whenever any question of doubt arises, the benefit of doubt, so to speak, must be given to Madras. The question was also raised during the arbitration proceedings as to whether the Krishnarajasagara Scheme was feasible at all, if full effect has to be given to the prescriptive rights of Madras. Mysore took up the position that the question as to the success or failure of the Krishnarajasagara Scheme was no concern of Madras and the Arbitrator as well as the assessor stated in terms that the question as to the success or failure of the Krishnarajasagara Scheme was not an element in the consideration of the rights of Madras. Then, as Your Lordship is aware, the matter went upto the Secretary of State. The Secretary of State was inclined to have a prima facie view that the award of the Arbitrator, in so far as it recognized Madras' claim to the extent of only 6.5 feet, could not be supported, that there was ample material from which the Arbitrator or the court could come to the conclusion that Madras was entitled to a flow of 7.0 or 7.5 feet uniformly. "

[Emphasis supplied]

[Ref: TNDC Vol. VI, page 265]

51. Shri Ayyar also added that after the award of Justice Griffin aforesaid, was set aside by Secretary of States, United Kingdom, negotiations started for amicable final settlement of the dispute between the parties. He further stated on behalf of the State of Madras:

“Madras was willing to give in and accept varying gauges in different months. That was a large concession made by Madras. And because Madras felt that the time had come to finally adjust the disputes between themselves, Madras gave in in that matter. That is one point which is borne out by the correspondence. Madras also made it quite clear to Mysore in the course of the correspondence that they must take the chance of a failure of the Krishnarajasagara Scheme. In terms Mr Howley said that he was not concerned with the evolution of a successful financial scheme in regard to the Krishnarajasagara. The paramount and main consideration ought to be, it was urged on the part of Madras, the protection of the existing rights of Madras, which go back to historic times.

After all this, an agreement was reached which is in the nature of a compromise. A court would be slow to disturb a compromise which has been deliberately arrived at by the parties, after consultation with expert engineers and after legal advice. If a court would be slow to disturb an ordinary contract, there would be greater reluctance on the part of a court to disturb an arrangement which is in the nature of a compromise.”

Emphasis supplied]

[Ref:TNDC Vol. VI, page 266]

52. Even the new reservoirs which the then State of Mysore was permitted to construct had a condition that they shall be operated in such a manner which shall not affect the limit flows which were due to the then State of Madras at the Upper Anicut in terms of the Rules of Regulation framed for Krishnarajasagara reservoir. It shall be proper to reproduce Clause 10(vii):

“10(vii) The Mysore Government on their part agree that extensions of irrigation in Mysore as specified in clause (iv) above shall be carried out only by means of reservoirs constructed on the Cauvery and its tributaries mentioned in Schedule A of the 1892 agreement. Such reservoirs may be of an effective capacity of 45,000 million cubic feet in the aggregate, and the impounding therein shall be so regulated as not to make any material diminution in supplies connoted by the gauges accepted in the Rules of Regulation for the Krishnarajasagara forming Annexure I to this agreement, it being understood that the rules for working such reservoirs shall be so framed as to reduce to within 5 percent any loss during any impounding period, by the adoption of suitable proportion factors, impounding formula or such other means as may be settled at the time.”

[Emphasis supplied]

Clause 10(vii) specifically puts three conditions:

- (i) Mysore Government could extend irrigation in areas specified in Clause 10(iv) by means of reservoirs constructed on the Cauvery and its tributaries.
- (ii) Such reservoirs shall be of an effective capacity of 45,000 million cubic feet in the aggregate.
- (iii) The impounding in such reservoirs constructed on the tributaries of the river Cauvery in the Mysore shall be ‘so regulated as not to make any material diminution in supplies connoted by the gauges accepted in the Rules of Regulation for the Krishnarajasagara forming Annexure I to this agreement.’

The condition (iii) above enjoins to regulate impounding in reservoirs constructed on the tributaries in such a manner so as not to make any

material diminution in the supplies connoted by the gauges specified in Rule 7 of the Rules of Regulation of the Agreement of 1924 in respect of KRS.

53. Our attention was also drawn to a letter dated 10th/12th December, 1959 written by Shri H. M. Channabasappa to Shri Kakkan, Minister for Public Works, Govt. of Madras wherein it has been stated as under:-

.....
 “3. You are probably aware of Mysore’s view which has been given expression to quite often, that the operation of 1924 Agreement has been working very harshly on Mysore’s interests. Even the exercise of the very restricted rights conferred on Mysore under the Agreement has been rendered difficult because they are hedged in by all sorts of conditions. Mainly for this reason, and for other reasons too, it has not so far been possible for Mysore to bring under irrigation the additional extent of 1,10,000 acres which Mysore is entitled to develop under the Agreement. Extension of irrigation under the old channels by improvement of duty, etc., has also been considerably hampered.”

Along with this letter, a detailed note on some of the main issues pertaining to development of irrigation in the Cauvery basin based on the 1924 Agreement proposed to be taken for discussion, was also enclosed. (Ref. TNDC Vol. VII. Ext. 469; page 183-190).

54. In this background it was urged on behalf of the State of Karnataka that agreement of the year 1924 had been entered under some compulsion. The then State of Madras was claiming the flow as provided

by rule 7 of Rules of regulation, although they were conscious of the fact that in that event it was not possible for the Government of Mysore to irrigate lands contemplated under the agreement from the Krishnarajasagara reservoir, for the construction of which the said agreement was entered into. The State of Madras said in its pleadings as well as in the arguments during the Arbitration proceedings that the State of Mysore had taken a risk of their being not able to cultivate the full extent of land mentioned therein. The State of Madras was asserting its superiority on the prescriptive right of Madras over the flows of river Cauvery. The claim of riparian States on basis of prior appropriation has been examined in several cases by Supreme Court of United States of America referred to above. They have clearly repudiated the claim for any such right saying that neither the upper riparian State can claim paramount right to appropriate more water than what is its reasonable requirement nor the lower riparian State can claim any prescriptive right to the flow of the river. The waters of an inter-State or international river are to be shared in a just and equitable manner so as to serve the need and necessity of each riparian State. The legal aspect of this question has already been discussed above with reference to those reports and decisions including the view expressed by the Supreme Court of India on reference being made by the President of India under Article 143 of the Constitution in connection with this very Cauvery Water Dispute. In the said opinion, at paragraph 71 and 72, the Supreme Court has clearly enunciated the right of the different riparian States in respect of the share

of the waters of an inter-State river like Cauvery. (1993 Supp. (I) SCC 96). As such the claim by Madras/Tamil Nadu as a lower riparian State on basis of the prescriptive right, on the river flows does not need consideration.

55. On behalf of the state of Tamil Nadu during the course of arguments, notes of arguments have been filed on different topics and issues. Tamil Nadu Note No.6 relates to interpretation of 1924 agreement. In the said note a chart has been enclosed at page 14 under the heading FLOWS RECEIVED AT METTUR RESERVOIR FROM KRS RELEASES, KABINI ARM & INTERMEDIATE CATCHMENT. It may be advisable to reproduce the said chart omitting the details given in the statement annexed thereto.

“As per Tamil Nadu Statement of Case (TN-1, Page 63) the average inflow into Mettur for 38 years from 1934-35 to 1971-72 (vide Statement-1 enclosed) 377.141 TMC.

This inflow of 377.1 TMC comprises of three components viz.

1. Issues from KRS as per Rules of Regulation of KRS in Annexure-1 of 1924 Agreement i.e. based on the impounding formula applied at KRS;
2. contribution from Kabini arm;
3. and contribution from the intermediate catchment below KRS and below Hullahalli anicut on Kabini (including the contribution from Tamil Nadu catchment area above Mettur drained by Chinar and other small streams estimated as 25 TMC).

From the records disclosed by Karnataka itself, the position emerges as follows:-

KRS arm contributes	159.780 TMC
Kabini arm contributes	112.615 TMC
Intermediate catchment contributes	104.746 TMC
Total:	377.141 TMC”

In the same note yearwise inflow to Mettur from 1934 to 1972 has been given in a chart.

56. Note No 31 filed on behalf of Tamil Nadu during the arguments on issues under Group III, at page 3 a chart has been given which is as follows:-

“Estimated Yield for Tamil Nadu other than Cauvery is as under:

Description	Quantity in TMC	Reference
Total water Potential	*1261	TN.PL. – 1, Page - 74
Import from Karnataka Cauvery	380	TN.PL. – 1, Page - 74
Yield in Cauvery in Tamil Nadu	222	Data given to Assessors in May 1991.
Net Quantity other than Cauvery	659	

Remarks: *The figure of 1261 TMC is given as the total water potential of T.N. State as a whole, which is compared with the total water potential of Karnataka shown as 3440 TMC (T.N. PL1. P 74)

57. On the basis of aforesaid chart, import from Karnataka Cauvery and the yield of Cauvery in Tamil Nadu has been shown as 380 TMC and 222 TMC respectively. The total thereof shall be 602 TMC. Thus Tamil Nadu is indicating availability of about 602 TMC out of the total yield of the Cauvery basin which has been assessed and estimated at 740 TMC

at 50% dependability. The result thereof would be that only 138 TMC would be left for the States of Karnataka and Kerala.

58. The grievance of Karnataka is that the then State of Mysore had entered into the Agreement of the year 1924 under which it had to maintain the flow at Upper Anicut from seven and a half feet to three feet in different months as specified in rule 7 of the Rules of Regulation, Annexure I to the agreement under some compulsions. Karnataka contends that because of rule 7 aforesaid, the then State of Mysore was not able to irrigate the areas which they could have irrigated under the terms of the agreement after construction of the Krishnarajasagara reservoir.

59. In the above background it has to be examined in the present dispute when the question of equitable apportionment of water is being considered after expiry of the period of 50 years, as to whether the State of Tamil Nadu can insist that the State of Karnataka should continue releasing more than 300 TMC of waters of river Cauvery into Mettur reservoir.

60. The State of Karnataka in its Note KAR 3, page 10, filed on 10.07.2002, has taken the stand that "any future determination post-1974 would have to be made on the following basis:-

- (a) how much water is needed to irrigate the areas to which Tamil Nadu and Karnataka are entitled, under the Agreement; and

(b) how should the surplus be divided and distributed for the planned areas of Karnataka and for the areas cultivated by Tamil Nadu (outside the Agreement of 1924).

It is respectfully submitted that all areas contemplated to be irrigated under the Agreement of 1924 are concerned – whether by Tamil Nadu or by Karnataka, they have first to be taken into account as committed uses or existing uses. The remaining areas should be considered on the principles of equitable apportionment that are well settled and on the evidence led before this Hon'ble Tribunal.”

61. The State of Tamil Nadu, on the other hand, has taken the stand that the agreements of 1892 and 1924 are valid and enforceable; but in the alternative they suggest that the Tribunal will have to consider apportionment of Cauvery waters on the following basis:-

- (i) Protection of irrigated areas as existing prior to 1924 both in Karnataka as well as Tamil Nadu.
- (ii) The development of irrigation as contemplated in the 1924 agreement but actually developed before 1974.
- (iii) All other development to be considered as per different priorities suggested by them, indicated later on in the report.

62. Before the requirement of water of the two States is determined, the areas which have been developed by the two States have to be examined. The areas of the three States of Karnataka, Tamil Nadu and Kerala and the Union Territory of Pondicherry which are to be served by the Cauvery system for irrigation have to be considered under the following four categories, i.e.:-

- (i) Areas which were developed before the agreement of the year 1924
- (ii) Areas which have been contemplated for development in terms of the agreement of the year 1924.
- (iii) Areas which have been developed outside the agreement from 1924 upto 2.6.1990, the date of the constitution of the Tribunal. (i.e. from 1924 to 1990)
- (iv) Areas which may be allowed to be irrigated on the principle of equitable apportionment.

Chapter 2

**Development of the Irrigated Areas in the State of
Madras/Tamil Nadu in the Cauvery Basin**

**Areas developed by Madras/Tamil Nadu before the year 1924
and their entitlement under the terms of the agreement of 1924**

Tamil Nadu while indicating the areas developed prior to 1924 and thereafter so far the requirement of the water of river Cauvery is concerned, has filed Statement No.1 titled "Order of Priority in Meeting the Irrigation Demands of the Crop Area of the Basin States' which is as follows:-

**"ORDER OF PRIORITY IN MEETING THE IRRIGATION DEMANDS OF THE CROP AREA OF
THE BASIN STATES**

Order of Priority	Tamil Nadu		Area in Lakh Acres	Karnataka		Area in Lakh Acres
(1)	(2)		(3)	(4)		(5)
I	Area as on 1924					
	a	Cauvery Delta System	9.775	a	Anicut channels	1.110
	b	LCA system	1.196	b	Minor irrigation	2.039
	c	Anicut channels	2.660			
	d	Sethiathope Anicut system (Supplementation)	0.379			
	e	Minor Irrigation	2.210			
		Total-I	16.220		Total-I	3.149
II	Area permitted by the 1924 Agreement & developed before 1974					
	a	Cauvery Mettur Project (Clause 10(v) of 1924 Agreement) as on 1974	3.210	a	KRS (Clause 10(iv) of 1924 Agreement)	1.250
	b	Additional area developed due to improvement in duty as on 1974. (Clause 10(xii) of 1924 Agreement)	4.937	b	Extension upto 1/3 area under each channel (Clause 10(iv) of 1924 Agreement) developed as on 1974	0.447
	c	Lower Bhavani Project as on 1974	2.070	c	Future extension (as per clause 10(xiv) of 1924 Agreement) in Cauvery and its tributaries as on 1974	0.000
	d	Amaravathy reservoir as on 1974. (as per Clause 10(xiv) of 1924 Agreement)	0.215	d	Additional area developed due to improvement in duty as on 1974, other than (b) (Clause 10(xii) of 1924 Agreement)	0.670

1	2	3	4	5	6	7
	e	Minor Irrigation - Additional area	0.699	e	New Projects in the non-scheduled streams as on 1974	0.650
				f	Minor Irrigation - Additional area	0.361
		Total-II	11.131		Total-II	3.378
		Total-I & II	27.351		Total-I & II	6.527
III Area permitted by the 1924 Agreement but developed after 1974						
	a	NIL	0.000	a	Under future extension as per 1924 Agreement as per Clause 10(iv), limited to the total upto 1.10 lakh acres including the area under the priority II(c).	1.100
		Total-III	0.000		Total-III	1.100
		Total-I to III	27.351		Total-I to III	7.627
IV Other area developed before 1974 and MI area as on 1990						
	a	Systems developed prior to 1974, under new systems not covered in I to III. (Pullambady & New Kattalai).	0.463	a	Area under Minor Irrigation - Potential created after 1974	3.792
		Total-IV	0.463		Total-IV	3.792
		Total-I to IV	27.814		Total-I to IV	11.419
V Other area developed after 1974 under the on going and proposed projects						
	a	New projects commissioned after 1974	0.553	a	Developed after 1974 under off-set reservoirs, Kabini & Suvarnavathy (clause 10(xiv)) but limited to the area under the reservoirs of TN developed under clause 10	2.285
	b	New projects under execution	0.062	b	Projects not covered in priorities I to V in the ongoing projects	0.786
	c	Proposed projects	0.304	c	Other new projects	12.340
	d	Minor Irrigation - Additional area	0.536	d	Proposed projects	2.877
		Total-V	1.455		Total-V	18.288
		Grand Total (I to V)	29.269		Grand Total (I to V)	29.707

Note:

1. Area refers to gross area
2. Since the objective is to assess the surplus after utilization as on 1974, the area under each category is counted until 1974 only under Priorities - I & II.
3. Areas under Minor Irrigation (Tanks and pickups) as on 1924 and 1974 as given in the report of CFFC are grouped under first and second priority respectively and the potential created after 1974 for Karnataka is given in the IV Priority.
4. For the State of Kerala the Minor Irrigation area of 0.534 lakh acres given in the report of CFFC will get second priority. Other areas under the ongoing and proposed projects excluding the areas under trans-basin projects, 2.590 lakh acres will get Priority - V.
5. The area of 0.43 lakh acres in the Karaikal region of Union Territory of Pondicherry is to be covered under Priority - I, like the Area under Cauvery Delta system as on 1924. But it is not counted here. "

2. According to the aforesaid statement, in the State of Madras, the total area under irrigation in the delta and elsewhere in the basin through anicut channels and minor irrigation prior to 1924 has been shown as 16,22,000 acres. It may be pointed out that during the Mysore-Madras arbitration of the year 1913-14, before Justice J Griffin, it was claimed that 8.90 lakh acres and 1.12 lakh acres respectively under Cauvery delta system and Lower Coleroon anicut system, the total being 10.02 lakh acres, were under the Cauvery system of irrigation. This does not include 27000 acres which related to French irrigation system. (TNDC Vol.II, page-45, paragraph 13). In the award it has been said:

“Madras have, roughly speaking, some, 12,00,000 acres under irrigation from the Cauvery...” (TNDC Vol IV,Exh. 228 at page 184)

This portion of the award has also been reproduced by Karnataka in KAR Note No.20.

3. It further appears that as early as in the year 1915, Sir M Visweswaraya, the then Diwan of the State of Mysore (now Karnataka) wrote a letter dated 06 July 1915 to the State of Madras (KAR Volume No I, page 267) in which he has stated:

“(i) The whole area irrigated under the Cauvery System in Mysore at present is about 1,15,000 acres only against a corresponding area of 12,25,500 acres in Madras...”.

This letter has also been referred to by the State of Karnataka in its KAR Note 20 page 44(b). It may be mentioned that this does not include the areas under minor irrigation or tributaries. This is also not disputed by

the State of Karnataka [KAR Note 20 page 44(b)]. On the contrary, the State of Karnataka has time and again referred to second revised project report of Cauvery Mettur Project of Col Ellis which has been referred to in Annexure III of the agreement of 1924. This report on page 140-141 of Volume V, Exh. E-104(D) produced by Karnataka indicated net irrigated area or ayacut of the project as 10.38 lakh acres, comprising 1.12 lakh acres of LCA and 0.27 lakh acres of Union Territory of Pondicherry. This leaves an area of 0.09 lakh acres as ayacut of C.D.S. In view of the above it would be appropriate to consider 8.99 lakh acres quoted in C.F.F.C. report and elsewhere in earlier paragraphs.

4. Shri Divan, learned Senior Counsel on behalf of the State of Karnataka during the course of arguments on Group-III Issues brought to the notice of this Tribunal that the following four channels –

1. Ayyan Channel
2. Peruvalai Channel
3. Srirangam Nattu Voikkal Channel
4. Puthuvathalai Channel

which fall within Trichinopoly district have been counted under the Cauvery Delta System also. To clarify this point, he referred to Exh. Nos.368, 367, 366 and 365 of Karnataka Vol. XXXV. These exhibits are depicting Administrative Reports for the years 1969-70, 1968-69, 1967-68 and 1966-67 respectively, wherein the area of the above four channels varied from 44,800 acres to 46,900 acres approximately. He stated that this area has been counted twice as part of Cauvery Delta System as

also under Salem-Tiruchy Channels. As such, he pleaded that this area should be counted only once. Since we are discussing the existing areas of the period pre-1924, a reference to Administrative Report of 1923-24 which is a printed authentic report and is exhibited as KAR Vol. XXXV, Exh. No.356, page 6, is more logical; – this document gives area of the aforesaid four channels as 37,334 acres (35,133 flow + 2,201 lift) which is area in Tiruchy district (Salem-Tiruchy Channels) shown under Cauvery Delta System. It is to be noted here that in earlier stages Upper Anicut was considered to be at the head of delta. With coming of Grand Anicut Canal in 1930s, Grand anicut virtually became controlling point of C.D.S. Thus, the above figure of 37,334 acres will need to be deducted from the Cauvery delta area of Tamil Nadu which will now work out as $8,99,000 - 37,334 = 8,61,666$ acres (say 8,61,670 acres) during pre-1924.

5. So far the claim in respect of 2.66 lakh acres by the State of Tamil Nadu in respect of Anicut channels on main Cauvery (1.583 lakh acres) and tributaries (1.077 lakh acres) has been mentioned by the CFFC in their report in the year 1972, the details are as given below. The State of Tamil Nadu has furnished details of the area under anicut channels in their Statement 1(C) dated 5th October, 2004 as under:-

	<u>(In Lakh Acres)</u>	
	<u>1st Crop</u>	<u>2nd Crop</u>
(i) Kattalai Scheme	0.439	0.264
(ii) Salem-Tiruchy Channels	0.557	0.323
(iii) Kodivery Anicut System	0.197	0.020

(iv)	Kalingarayan Anicut System	0.120	0.106
(v)	Old Amaravathy Channels	0.290	0.173
(vi)	Noyyil River Channels	<u>0.148</u>	<u>0.023</u>
	Sub-total	1.751	0.909

Grand Total: 1.751+0.909 = 2.660 lakh acres

6. Shri Divan during his arguments did not object to the area shown under first crop totaling to 1.751 lakh acres; whereas for the second crop area totaling 0.909 lakh acres, he argued that this is arbitrary and should not be allowed. In this connection, he referred to TNDC Vol. XIV, pages 206, 207 & 208 wherein area of first and second crop in respect of above six anicut systems are given which were furnished by the State of Tamil Nadu to CFFC. In some of the anicut systems, namely: Kattalai, Salem-Tiruchy and Old Amaravathy channels, it has been mentioned that the record of the figures of second crop are not available and therefore, the same have been worked out based on the ratio of second crop and first crop as obtained in 1971. Shri Divan objected to this because the second crop figures pertaining to the year 1971 related to the period much later than the commissioning of Mettur reservoir and obviously, when the flows were copious, Tamil Nadu could raise second crop in larger areas. He, therefore, suggested that wherever record is not available, the second crop should be totally deleted. Here it may be mentioned that from the records available before this Tribunal it is evident that substantial area was under second crop even under anicut channels before 1924.

7. In respect of the above arguments, it would be pertinent to mention that since Shri Divan has accepted the figures of 1928 for the pre-1924 period (Ref. TNDC Vol. XIV, page 205); area under second crop as actually existing in the year 1923-24 and shown in the Administrative Report for that year, cannot be ignored. A reference to that Administrative Report indicates that in the case of Kodivery and Kalingarayan Anicut Systems, the areas given in the Administrative Report are also depicted in the TNDC Vol. XIV referred to above, as well as claimed in Statement 1(C). It has also been noticed that in the case of Salem-Tiruchy Channels, Administrative Report of 1923-24 does mention second crop figures in respect of 4 out of 13 channels which works out to about 47% of the first crop area. Similarly, in the case of Noyyil River Channels where the second crop area works out to about 15%, Shri Divan did not object to this. As Old Amaravathy Channels are closer to Noyyil River Channels, it seems appropriate to adopt the same percentage for the second crop area. In respect of Kattalai System, Administrative Report for the year 1940-41 is available in the same volume (KAR XXXV) which indicates extent of second crop in 34% of first crop area. As the development of second crop has gradually increased after operation of Mettur reservoir, it is considered reasonable to adopt a lesser figure of 25% for the year 1924 in respect of Kattalai System. The extent of second crop as discussed above, works out to 56,400 acres against 90,900 acres. Hence, in our opinion, it would be reasonable to allow second crop area in 56,400 acres. Thus, gross area under the

above six anicut systems would be 175.1 (1st crop) + 56.4 (2nd crop) = 231.5 thousand acres as against 2.66 lakh acres claimed by Tamil Nadu. The above modifications in the figures in respect of anicut systems as also the Cauvery delta have been depicted in a table, under para 10.

8. Tamil Nadu has further claimed an area of 2.210 lakh acres under minor irrigation. From TNDC Volume XI page 344-345, it appears that the State of Tamil Nadu had reported to the CFFC in respect of areas under minor irrigation prior to 1924 as only 2.19 lakh acres. Therefore, the claim of Tamil Nadu in respect of areas under minor irrigation have to be restricted to 2.19 lakhs.

9. Under Statement I, Priority I aforesaid, Tamil Nadu has claimed 0.379 lakh acres under Sethiathope Anicut system. In adjacent Vellar basin where this project is located has its own supply source and what is done is only supplementation. Admittedly, Sethiathope Anicut system is outside the Cauvery basin. In the facts and circumstances of the present dispute a view has been taken that no note is to be taken in respect of any trans-basin transfer of the water of river Cauvery already made, as such no water can be allocated for Sethiathope Anicut system. The detailed reasons as to why trans-basin transfer should not be allowed in Cauvery basin have been given in another chapter in later Volume. This area of 0.379 lakh acres has, therefore, to be deducted from the claim made on behalf of the State of Tamil Nadu for areas under Cauvery system of irrigation.

10. The area claimed by Tamil Nadu as under irrigation prior to 1924 agreement is 16.220 lakh acres. Out of which 0.379 lakh acres in respect of Sethiathope Anicut System and 0.02 lakh acres in respect of minor irrigation have to be reduced for the reasons mentioned above. According to us, the total area under this Category should be 16.220 lakh acres minus 0.373 + 0.345 + 0.379 + 0.02 = 1.117 lakh acres. To this an area of 0.09 lakh acres under C.D.S. as explained above will have to be added. Thus the total being 15.193 lakh acres. A statement giving systemwise details of the areas aggregating to 15.193 lakh acres is as under:-

Statement showing systemwise details of area under irrigation in Madras/Tamil Nadu prior to 1924 Agreement

Figures in '000' acres

Project	1st Crop	2 nd Crop	Total	Reference	Remarks
1	2	3	4	5	6
I) Pre-1924 Agreement:					
i) a) Old Delta (Cauvery & Vennar Sub-basins)	861.67	87.50	949.17	TNDC Vol.XI, page 1	Karaikal area of Pondicherry not included in old delta figures.
b) Lower Coleroon Anicut (LCA)	112.00	7.60	119.60	TNDC Vol.XI, page 1.	-
c) Area above upper anicut:				TNDC Vol. XI, page 1.	
1. Kattalai System	43.90	10.97	54.87	Item 4 to 9	Second crop Navarai Feb-June
2. Kodiveri Anicut	19.70	2.00	21.70	-	-do-
3. Kallingarayan Anicut	12.00	10.60	22.60	-	-do-
4. Salem Tiruchi Channels	55.70	26.18	81.88	-	-do-
5. Old Amaravathi Channels	29.00	4.35	33.35	-	-do-
6. Noyyil River Channels	14.80	2.30	17.10	-	-do-
Sub-Total (c)	175.10	56.40	231.50	-	-
ii) Minor Irrigation	219.02	-	219.02	TNDC Vol.XI, page 2.	-
Total (I)	1367.79	151.50	1519.29	-	-

Say 15.193 lakhs

Areas entitled under the Agreement of 1924

11. The next priority claim on behalf of the State of Tamil Nadu is for the areas which were permitted under the terms of the agreement of the year 1924 and developed before 1974.

12. These areas should be considered under three clauses of the agreement as follows:-

II (i) *Areas permitted by the 1924 Agreement under Clause 10(v) along with annexure III (para 2).*

II(ii) Areas to be developed as per provisions of Clause 10(xii) by improvement of duty.

II(iii) Areas developed under provisions of Clause 10(xiv).

13. Under Claim II (a), claim has been made on the basis of Clause 10(v) of the Agreement of the year 1924 over an area of 3.210 lakh acres. This has been specifically provided in Clause 10(v) read with the Revised Cauvery Mettur Project Report of 1921, Vo. V. page 4 para 11. [Ref Exh.: E-104(c)], which permitted 20,000 acres by way of second crop apart from 3,01,000, specified in Clause 10(v).

14. So far claim of Tamil Nadu under II(b) as indicated above in Statement No. I, it is in respect of development of an additional area of 4.937 lakh acres due to improvement of duty under Clause 10(xii) of 1924 Agreement that requires detailed examination and consideration on the basis of materials on record, as to whether such areas which Tamil Nadu has claimed, have been developed in accordance with the conditions

prescribed by Clause 10(v) read with Clause 10(xii) of the Agreement. This claim not only requires to be examined with reference to the terms of the agreement but also by verification and examination of the total areas claimed to have been developed. It shall be proper to reproduce the relevant clauses.

“(v) The Madras Government on their part agree to limit the new area of irrigation under their Cauvery Mettur project to 3,01,000 acres, and the capacity of the new reservoir at Mettur, above the lowest irrigation sluice to ninety-three thousand five hundred million cubic feet.

Provided that, should scouring sluices be constructed in the dam at a lower level than the irrigation sluice, the dates on which such scouring sluices are opened shall be communicated to the Mysore Government.

(xii) The Madras Government and the Mysore Government further agree that the limits of extension of irrigation specified in clauses (iv) and (v) above shall not preclude extensions of irrigation effected solely by improvement of duty, without any increase of the quantity of water used.

(xiv) The Madras Government shall be at liberty to construct new irrigation works on the tributaries of the Cauvery in Madras and, should the Madras Government construct, on the Bhavani, Amaravati or Noyil rivers in Madras, any new storage reservoir, the Mysore Government shall be at liberty to construct, as an offset, a storage reservoir in addition to those referred to in clause (vii) of this agreement on one of the tributaries of the Cauvery in Mysore, of a capacity not exceeding 60 percent of the new reservoir in Madras.

Provided that the impounding in such reservoirs shall not diminish or affect in any way the supplies to which the Madras Government and the Mysore Government respectively are entitled under this agreement, or the division of surplus water which, it is anticipated, will be available for division on the termination of this agreement as provided in clause (xi).“

15. In respect of the claim made on behalf of Tamil Nadu under clause 10(xii) of the 1924 Agreement over an area of 4.937 lakh acres of land, it is the stand of Tamil Nadu that this additional area was developed due to the improvement of duty as provided in the aforesaid clause. From a reading of clause 10(v), it appears that there should be nexus between Cauvery Mettur Project and the new extension of 3,01,000 acres. In this connection, it would be pertinent to refer to the note of discussions between Diwan of Mysore and Third Member of Council, Govt. of Madras of 13th November, 1923 (TNDC Vol.V, Exh. 271 at page 137). Para 3 of the said note given at page 139 states as under:-

“(3) Duty:- Any increase in the acreage of irrigation (proportion being fixed) by improvement of duty may be duly provided for in the agreement, if desired, with the necessary safeguards, but this being a technical point should be thrashed out by the technical officers of both Governments now and their respective Governments advised. If, in respect of the new irrigation of 3,01,000 acres under Mettur any further increase under duty is to be provided for, similar provision will have to be made for similar increase under the new 1,10,000 acres.”

From the above, it is seen that reference to increase of the area by way of improvement of duty made in Clause 10(xii), is only in respect of new

irrigation area developed under Cauvery Mettur Project by improvement of duty. Out of the aforesaid area of 4.937 lakh acres, an area of 4.471 lakh acres has been developed spread over the entire basin as per details given below:-

i)	Old Delta	-	2,69,500 acres
ii)	L.C.A.	-	43,500 “
iii)	Kattalai Scheme	-	51,900 “
iv)	Salem-Trichy Channels	-	24,600 “
v)	Kodivery Anicut	-	27,300 “
vi)	Kalingrayan Anicut	-	5,400 “
vii)	Old Amaravathy Channel	-	2,200 “
viii)	Sethiathope Anicut (Supplementation)	-	<u>22,700</u> “
			<u>4,47,100 acres</u>

This area comprises of two components; (i) area developed by way of raising second crop 3.824 acres; and (ii) extension of new irrigation in 1.113 lakh acres. This position has been explained by Tamil Nadu later in their Statement No.1B.

16. The remaining balance of 0.466 lakh acres has been developed under the new delta area (G.A. Canal), but that too is by way of raising second crop and therefore, does not qualify under development by way of improvement of duty. The total of above two comes to 4.937 lakh acres.

(Ref: TN Statement No.5 date 13.8.2004). Source: Derived from Common Format Exh.E-18, pages 88 -109 and TNDC Vol. XV, pages 155-157.

17. The contention of Karnataka is that on a plain reading of clause 10(v) and 10(xii), it is apparent that any additional area could have been developed due to improvement of the duty while irrigating from the Cauvery Mettur Project and such areas must be developed within the project area of the said reservoir and that areas cannot be developed on entire spread of basin which have no nexus with the Cauvery Mettur Project. The extension of irrigation was to be effected solely by improvement of duty and that should be without any increase in the quantity of water.

Tamil Nadu has developed irrigation in different areas of the basin which will require additional water. The claim is not covered under clause 10 (xii) because:

(i) It is by way of increasing second crop area which will obviously need more water. It is noticed from the details given in Columns 3 to 7 under Priority II(b) that the State of Tamil Nadu has reduced the area of first crop namely: Samba and instead introduced Kuruvai followed by Thaladi and sometimes even Navarai. Obviously, this arrangement of reducing area of first crop i.e. Samba and instead raising two crops of paddy namely: Kuruvai and Thaladi/Navarai would be consuming more water. With the quantum of water required by one crop i.e. only Samba, the farmers cannot raise two crops of paddy with the same quantum of water. As such the plea of improvement in duty does not seem to be tenable;

(ii) This development is spread over Old Delta System, LCA and other river channels taking off from the main Cauvery, Kodiveri and Kalingrayan Anicuts of Bhavani river, Old Amaravathy channels, as also Sethiathope Anicut System which is outside the basin.

18. During the course of the arguments, Tamil Nadu filed another Statement (Marked 1A) on 30.9.2004 giving breakup of their claimed area of 4.937 lakh acres as under:-

- i) 3.422 – Under Clause 10(ii)
 - ii) 0.700 – Under Clause 10(v)
 - iii) 0.349 - Under Clause 10(xiv)
 - iv) 0.466 – Under Clause 10(xii)
- Total 4.937 lakh acres

The relevant part of the said statement is reproduced below:-

Order of Priority	Tamil Nadu		Area in Lakh Acres	Karnataka	Area in Lakh Acres	
(1)	(2)		(3)	(4)	(5)	
II	Area Developed before 1974 under the 1924 Agreement					
	a.	Under Clause 10(v) of 1924 Agreement	3.210	a	KRS (Clause 10(iv) of 1924 Agreement)	1.250
	I	Cauvery Mettur Project				
	li	Second Crop in Cauvery Delta System as per Cauvery Mettur Project Report	0.700			
	B	Under Clause 10(ii) of 1924 Agreement for Cauvery Delta System & Anicut Channels in Cauvery.	3.422	b	Extension upto 1/3 area under each channel (Clause 10(iv) of 1924 Agreement) developed as on 1974	0.447
	C	Under Clause 10(xii) of 1924 Agreement by Improvement of Duty in Cauvery Mettur Project	0.466	c	Future extension (as per clause 10(iv) of 1924 Agreement) in Cauvery and its tributaries as on 1974	0.000
	D	Under Clause 10(xiv) of 1924 Agreement in Lower Bhavani, Amaravathy & Anicut Channels in Tributaries.	2.634	d	Additional area developed due to improvement in duty as on 1974, other than (b) (Clause 10(xii) of 1924 Agreement	0.670
	e	Minor Irrigation – Additional area	0.699	e	New projects in the non-scheduled streams as on 1974	0.650
				f	Minor Irrigation – Additional area	0.361
	Total-II		11.131	Total-II		3.378

It appears that in the Cauvery Mettur Project it had been conceived that 70,000 acres would be developed in the delta by Madras by way of second crop apart from 20,000 acres under the Cauvery Mettur Project. As such this area of 70,000 acres can also be claimed under Category II (a) apart from 3,21,000 acres, the total being (3,21,000+70,000) 3,91,000 acres.

19. It appears that in the Statement marked 1A, the area of 4.937 lakh acres which had been claimed under Clause 10(xii), has been split into four blocks. 70,000 acres has been put under Category II(a)(ii) saying that this area was permitted as second crop in the Cauvery delta system, by the Cauvery Mettur Project Report. A block area of 3.422 lakhs acres has been claimed under clause 10(ii) of the Agreement of the year 1924 and shown Category II(b). And an area of 0.466 lakh acres has been put under Category II (c), as the area developed by improvement of duty in the Cauvery Mettur Project. The remaining area of 0.349 lakh acres has been shown under Category II(d), as new works under Clause 10(xiv).

20. On 1st October, 2004 a revised statement (Marked as 1B) was filed in support of the aforesaid claim distributing areas under different heads and clauses of the Agreement. Relevant part of the revised statement is as under:-

"

Order of Priority	Tamil Nadu	Area in Lakh Acres	Karnataka	Area in Lakh Acres		
(1)	(2)	(3)	(4)	(5)		
II	AREA DEVELOPED BEFORE 1974 UNDER THE AGREEMENT					
	a.	Under Clause 10(v) of 1924 Agreement		a	KRS (Clause 10(iv) of 1924 Agreement)	1.250
	i	Grand Anicut Canal 2.760				
	ii	Mettur Canal 0.450				
		Sub Total (i & ii)	3.210			
	iii	Second Crop in Cauvery Delta System as per Cauvery Mettur Project Report	0.700			
	b	Under Clause 10(xii) of 1924 Agreement by Improvement of Duty in Cauvery Mettur Project	0.466	b	Additional area developed under KRS due to improvement in duty as on 1974, other than (a) (Clause 10(xii) of 1924 Agreement).	0.670
	c	Under Clause 10(xiv) of 1924 Agreement in Lower Bhavani, Amaravathy & Anicut Channels in Tributaries		c	Extension upto 1/3 area under each channel (Clause 10(iv) of 1924 Agreement) developed as on 1974	0.447
	i	Kodiveri Anicut System 0.273				
	ii	Kalingarayan Anicut System 0.054				
iii	Old Amaravathy Channels 0.022					
iv	Lower Bhavani Project 2.070	2.634				
v	Amaravathy Reservoir 0.215					
	Sub-Total (c)	2.634				
d	Under Clause 10(ii) of 1924 Agreement for Cauvery Delta System		d	Future extension (as per clause 10(iv) of 1924 Agreement) in Cauvery and its tributaries as on 1974	0.000	

1	2	3	4	5	6	7
	i	Cauvery Delta System 1.995				
	ii	Lower Coleroon Anicut System 0.435				
	iii	Sethiathope Anicut System (Supplementation) 0.227				
		Sub Total (d)	2.657			
	e	Anicut Channels by Improvement of Duty				
	i	Kattalai Scheme 0.519		e	New projects in the non-scheduled streams as on 1974	
	ii	Salem – Trichy Channels 0.246				
		Sub Total (e)	0.765			0.650
	f	Minor Irrigation – Additional Area	0.699	f	Minor Irrigation – Additional Area	0.361
		Total-II	11.131		Total-II	3.378

21. On 5.10.2004 a statement marked as Statement 1C was filed.

The contents of which are as under:

“ORDER OF PRIORITY IN MEETING THE IRRIGATION DEMANDS OF THE CROP AREA OF THE STATE OF TAMIL NADU

Tamil Nadu Statement 1-C

Area in Lakh acres

Order of Priority	Name of System/ Channel	Net Area (First crop)	Second Crop Area	Gross Area Col.(3) +Col.(4)	References
(1)	(2)	(3)	(4)	(5)	(6)
I	AREAS UNDER IRRIGATION AS ON 1924				
A.	Cauvery Delta System	8.900	0.875	9.775	TN.ICF,Vol.I, Page-88
B.	LCA system	1.120	0.076	1.196	TN.ICF,Vol.I, Page-91
C	Anicut Channels				

1	2	3	4	5	6	7
	i	Kattalai Scheme	0.439	0.264	0.703	TN.ICF, Vol.I, Page-94
	ii	Salem-Trichi Channels	0.557	0.323	0.880	TN.ICF, Vol.I, Page-103
	iii	Kodiveri Anicut System	0.197	0.020	0.217	TN.ICF, Vol.I, Page-97
	iv	Kalingarayan Anicut System	0.120	0.106	0.226	TN.ICF, Vol.I, Page-100
	v	Old Amaravathy Channels	0.290	0.173	0.463	TN.ICF, Vol.I, Page-106
	i	Noyyil River Channels	0.148	0.023	0.171	TN.ICF, Vol.I, Page-109
		Sub Total(c)	1.751	0.909	2.660	
	D	Sethiathope Anicut System (Supplementation)	0.311	0.068	0.379	TNDC Vol.XV, Page 155 & TNDC Vol XIV, Pg.205
	E	Minor Irrigation	2.210		2.210	TNDC Vol.XV, Page 157
		TOTAL-I	14.292	1.928	16.220	
II	AREA PERMITTED BY THE 1924 AGREEMENT DEVELOPED BEFORE 1974					
	A	Cauvery Mettur Project, (Clause 10(v) of 1924 Agreement)				
	i	Grand Anicut canal	2.560	0.200	2.760	TN.ICF, Vol.I, Pg.112 & 1924 Agreement Annexure III Para 2, CMP Report 1921, Vol.V, Para 11, Page 4, vide TN.ICF, Vol.VII, Book 3, Page 102.
	ii	Mettur Canals	0.450		0.450	TN.ICF, Vol-I, Page-118
		Sub total(i & ii)	3.010	0.200	3.210	
	iii	Second crop in Cauvery Delta System as per Cauvery Mettur Project Report		0.700	0.700	CMP Report 1921, Vol.V, Para 11, Page 4 & Annexure III Para 2
		Sub total (a)	3.010	0.900	3.910	
	B	Under Clause 10(xii) of 1924 Agreement by Improvement in Duty in Cauvery Mettur Project. (Grand Anicut Canal) (II Crop 0.666 - 0.200)	0	0.466	0.466	TN.ICF.Vol.1, Page 112
		Sub total (b)	0	0.466	0.466	
	C.	Under Clause 10(xiv) of 1924 Agreement in Lower Bhavani, Amaravathy & Anicut Channels in Tributaries				
	i	Kodiveri Anicut System (I crop 0.245 - 0.197) & (II crop 0.245 - 0.020)	0.048*	0.225	0.273	TN.ICF, Vol.I, Page 97
	ii	Kalingarayan Anicut System (I crop 0.140 - 0.120) & (II crop 0.140 - 0.106)	0.020*	0.034	0.054	TN.ICF, Vol.I Page-100

1	2	3	4	5	6	
iii	Old Amaravathy Channel (I crop 0.312 - 0.290)	0.022*		0.022	TN.ICF, Vol.I, Page 106	
iv	Lower Bhavani Project (As per Clause 10(xiv) of 1924 Agreement)	2.070		2.070	TN.ICF, Vol.I, Page 115	
v	Amaravathy Reservoir.(As per Clause 10(xiv) of 1924 Agreement)	0.215		0.215	TN.ICF, Vol.I, Page 121	
	Sub total(c)	2.375	0.259	2.634		
Under Clause 10(ii) of 1924 Agreement for Cauvery Delta System						
D.	i	Cauvery Delta System (I crop 9.07 - 8.90) & (II crop 3.40 - 0.875 - 0.700)	0.170*	1.825	1.995	TN.ICF, Vol.I, Page 88
	ii	Lower Coleroon Anicut System	0.203*	0.232	0.435	TN.ICF, Vol.I, Page 91
		(I crop 1.323 - 1.120) & (II crop 0.308 - 0.076)				
	iii	Sethiathope Anicut system (Supplementation)	0.170*	0.057	0.227	TNDC.Vol.XIV Pages 215 & TN.ICF Vol.I Page 82
		(I crop 0.481 - 0.311) & (II crop 0.125 - 0.068)				
	Sub Total (d)	0.543	2.114	2.657		
E Anicut Channels by Improvement of Duty						
E	i	Kattalai Scheme (I crop 0.763- 0.439) & (II crop 0.459 - 0.264)	0.324*	0.195	0.519	TN.ICF, Vol.I, Page 94
	ii	Salem Tiruchi Channel (I crop 0.713 - 0.557) & (II crop 0.413 - 0.323)	0.156*	0.090	0.246	TN.ICF, Vol.I, Page 103
	Sub total (e)	0.480	0.285	0.765		
F	Minor Irrigation Additional area (2.909- 2.210)	0.699		0.699	TNDC Vol.XV-Page 157	
	Total -II	7.107	4.024	11.131		
	Total - I & II	21.399	5.952	27.351		
III	Area permitted by the 1924 Agreement but developed after 1974					
	NIL					
	Total-III	0.000	0.000	0.000		
	Total - I to III	21.399	5.952	27.351		
IV	Other area developed before 1974					

1	2	3	4	5	6	7
	A	Systems developed prior to 1974, under new systems not covered in I to III				
	i	New Kattalai High level canal system	0.230	0.000	0.230	TN.ICF.VOL.I Page 124
	ii	Pullambadi Canal Schemes	0.233	0.000	0.233	TN.ICF.VOL.I Page 126
		Total-IV	0.463	0.000	0.463	
		Total - I to IV	21.862	5.952	27.814	
	V	Other area developed after 1974 under the ongoing and proposed projects				
	A	Area not covered in I to IV priorities		--		
	B	Other new projects commissioned after 1974				
	I	Palar Porandalar Reservoir (Amaravathy Sub Basin)	0.097	0.000	0.097	TN.ICF.Vol.I Page 132
	ii	Vattamalaikariodai Reservoir (Amara-vathy Sub Basin)	0.060	0.000	0.060	TN.ICF.Vol.I Page 132
	iii	Thoppaiar Reservoir	0.053	0.053	0.106	TN.ICF.Vol.I Page 132
	IV	Noyyal Reservoir Scheme (Athupalayam)	0.096	0.000	0.096	TN.ICF.Vol.I Page 133
	V	Kodaganar Reservoir Scheme	0.090	0.000	0.090	TN.ICF.Vol.I Page 133
	Vi	Orathupalayam Reservoir Scheme	0.104	0.000	0.104	TN.ICF.Vol.I Page 133
		Sub Total (b)	0.500	0.053	0.553	
	C	New Projects under execution (Nanganjiyar Reservoir Project)	0.062	0.000	0.062	TN.ICF.Vol.I Page 86
		Sub total (c)	0.062	0.000	0.062	
	D	Proposed projects				
	i	6 Minor Schemes above and below Mettur	0.138	0.039	0.177	TN.ICF.Vol.I Page 133
	ii	3 Minor Schemes in Bhavani Sub Basin	0.080	0.000	0.080	TN.ICF.Vol.I Page 133
	iii	3 Minor Schemes in Amaravathi Sub Basin	0.040	0.007	0.047	TN.ICF.Vol.I Page 86 & Page133
		Sub Total(d)	0.258	0.046	0.304	
	E	Minor Irrigation Additional area 3.445-2.909	0.536	0.000	0.536	TN.ICF.Vol.III Page 459 & TNDC Vol XV Page 157
		Total-V	1.356	0.099	1.455	
		Grand Total(I to V)	23.218	6.057	29.269	

- Increase in Net Area

- Note
1. Statement 5A is a modified Statement -5 filed on 13.08.2004, omitting Col.(3) & Col (4) in that, but including Col.(6) references with Priorities IV & V.
 2. In this Statement -5A, under II(a), item - (iii) Cauvery Delta System, Second crop area of 0.700 lakh acres is included as per the reference noted against it in Col.(6) & accordingly the same has been deducted under II(b), item (i).
 3. Net area refers to First crop area.
 4. Priority II: Col (3) & Col. (4) : Additional area over and above the area under Priority - I of the respective system, is derived from Pages 88 - 109, Tamil Nadu Information Common Format Vol.I for items b(ii) 1 to 7, c&d, TNDC Vol.XV, Pages: 155-157 for item e, and TNDC Vol. XIV, Page - 216 for item b(ii) 8.
 5. additional area developed after 1974 for Tamil Nadu is given under Priority-V. "

22. As already stated above, apart from the area of 70,000 acres, the remaining areas of about 4.23 lakh acres in Statements marked 1B and 1C have been claimed under clauses 10(xii), 10(xiv) and 10(ii), besides in Anicut channels, etc. 0.466 lakh acres [II (b)] have been claimed under clause 10(xii) of the agreement of 1924 by improvement of duty and 2.657 lakh acres [details given under II(d)] have been claimed under clause 10(ii) of the agreement. The remaining areas have been distributed to other clauses including the Anicut channels saying that they have been developed by improvement of duty.

23. In the aforesaid statement 1C an area of 2.657 lakh acres have now been claimed under clause 10(ii) of the Agreement of the year 1924. Clause 10(ii) of the Agreement is reproduced:

“(ii) The Mysore Government on their part hereby agree to regulate the discharge through and from the said reservoir ‘strictly in accordance with the Rules of Regulation set forth in the Annexure I,’ which Rules of Regulation shall be and form part of this agreement.”

(Emphasis supplied)

The aforesaid clause 10(ii) simply regulates the discharge through and from the reservoir KRS strictly in accordance with the Rules set forth in

Annexure I to the Rules of Regulation of KRS. There is no provision in the said clause for extension of any area.

24. Clause 10(v) of the Agreement of the year 1924 which permitted the then State of Madras to extend irrigation to new areas reads as under.

“(v) The Madras Government on their part agree to limit the new area of irrigation under their Cauvery Metur project to 301,000 acres, and the capacity of the new reservoir at Metur, above the lowest irrigation sluice to ninety three thousand five hundred million cubic feet.”

(Emphasis supplied).

Similarly in Annexure III to the Agreement of the year 1924 in paragraph 2 says:-

“2. The extent of future extension of irrigation in Mysore under the Cauvery and its tributaries mentioned in Schedule A of the 1892 agreement shall be fixed at 110,000 acres, and Madras shall have their Cauvery-Metur project as revised in 1921 with their new area of irrigation fixed at 301,000 acres, as specified in paragraph 11, page 4 of the Project Report (1921) Volume V.”

Page 4, para 11 of Cauvery Reservoir Project, Vol. V – E-104(d) reads as under:-

“11. Proposed extension of ayacut – The statement below shows the areas to which it is now proposed to extend irrigation as compared with previous proposals:-

Location	Original proposals New Irrigation		Revised proposals New Irrigation		Present proposals New Irrigation		Reduction under present proposals of original proposals	
	Single or first crop	Second crop	Single or first crop	Second crop	Single or first crop	Second crop	Single or first crop	Second crop
Existing delta area.	Acs. Nil	Acs. 70,000	Acs. Nil	Acs. 65,000	Acs. Nil	Acs. 70,000	Acs. Nil	Acs. Nil
New area under Grand Anicut canal or Vadavar extension.	329,396	75,000	{ 217,000 80,000	10,000	{ 221,000 80,000	20,000	28,396	55,000
Total...	329,396	145,000	297,000	75,000	301,000	90,000	28,396	55,000

The stand of Karnataka is that not only clause 10(v) uses the expression 'to limit' but even in Annexure III, paragraph 2, it has been mentioned that "their new area of irrigation fixed at" 3,01,000 acres; the extension permitted under double crop area by paragraph 11, page 4 of the Cauvery Mettur Project Report Volume V, clearly specifies 70,000 acres of double crop in the old Cauvery delta and 20,000 acres of double crop in the new delta area; the total being 90,000 acres. Thus, these provisions, viz, of 3,01,000 acres for first crop and 90,000 acres for double crop cannot be read in isolation with reference to paragraph 2 of Annexure III to the Agreement of 1924 quoted above.

In this back ground it is not correct to say that Cauvery Mettur Project was concerned with the areas under Grand Anicut Canal (New delta) only and nothing had been provided or prescribed in respect of old delta area. Apart from that the requirement of water for the delta had also been indicated in Cauvery Reservoir Project Vol.V Exh. E-104 (D),

Para 141; and further calculation of water requirement made are given in KAR Vol. XXXI, Exh. 350.

25. The learned Counsel for Karnataka submitted that from these provisions it is clear that the extent of extension of the first crop as well as the second crop has clearly been provided for in the 1924 Agreement; and for this reason there does not seem to be even a hint to the inference that extension by way of double crop could be unlimited with the help of limit flows. He referred to the letter dated 05 May 1920 from Chief Engineer, Madras to the Chief Engineer, Mysore wherein he had clarified the purpose of maintaining the limits of flow level at Cauvery dam; relevant portion is quoted below:

“I may mention that the limits I have proposed for June, September and October are largely based upon consideration of command, more especially though not entirely of the river channels above the Cauvery dam.” [Reference: KAR Volume II page 292-293, last but paragraph exhibit No.63].

In other words, the levels of 6.5 to 7 feet were necessary to raise the water level at Cauvery dam which could facilitate supply of irrigation water to the channels off taking on either side of the Cauvery Dam (Upper Anicut). At the same time when the water flowing at that level at Cauvery Dam reaches the delta area, it would be possible to run water in all the river channels in the delta area for providing irrigation water to the lands served by such channels. In view of the above Karnataka stand is that the arguments advanced by the learned counsel for Tamil Nadu that their State was free to extend double crop with limit flows wherever

possible is not tenable and therefore, the State of Madras/Tamil Nadu was not entitled to extend irrigation by way of double crop in excess of 90,000 acres as provided in 1924 Agreement read with Annexure III. Further, the stand of Karnataka is that any area developed with the flow of water available in delta or elsewhere for double crop cannot be treated at par with the areas which have been specified and prescribed by the terms of the Agreement including Annexure III, paragraph 2 of the Agreement read with para 11, page 4 of the Mettur Project Report (Volume V).

26. The learned Counsel for Tamil Nadu submitted that in Clause 10(v) of the Agreement as well as in para-2 of Annexure III, both referred to first crop area 3,01,000 acres. They do not mention about second crop. If the intention would have been that under the Mettur project, the second crop areas should have been limited to 90,000 acres, para 2 would have worded as under:-

“..... that their new area of irrigation fixed at 3,01,000 acres and 90,000 acres as second crop.”

[Emphasis supplied]

It was further submitted by Tamil Nadu that in the Mettur Project only proposal was made in respect of second crop but there was no bar that area of second crop could not be extended.

The stand of the State of Tamil Nadu was that even if there is no specific provision under clause 10(ii) of the Agreement in respect of extension of any new area either by way of first crop or by way of second

crop still as there was no restriction in respect of exercise of such rights, it was open to the State of Madras/Tamil Nadu to extend the area of irrigation by having double crop with the flows stipulated under the Agreement specifically by rule 7 of the Rules of Regulation; the State of Madras could have developed either the new areas in the delta or utilized the water for double crop in the delta even after the 1924 Agreement; such extension cannot be held to be unauthorized although not permitted or provided by the agreement specifically.

27. In our opinion, it is not necessary to go into these contentions. It is admitted that the water was being utilized by Tamil Nadu for second crop also for last so many decades. Considering the fact that it was being utilized for second crop, we think it proper to permit Tamil Nadu to use water for second crop, if surplus water is available with them.

28. Further in connection with the stand of Tamil Nadu that there was no restriction on the State of Madras in respect of extension of irrigation in Cauvery basin within the Madras territory, it was also pointed out by the learned Senior Counsel for Tamil Nadu that whereas in clause 10(iv) pertaining to Mysore State, a reference has been made even in respect of tributaries; but no such reference (of any tributaries) has been made in clause 10(v) which pertains to Madras and that expression regarding 'tributaries' was knowingly deleted from the draft agreement suggested by the State of Mysore. It appears that the reason for such deletion is that a new clause, ie., clause 10(xiv) was simultaneously introduced in the agreement which made provision for the State of Madras for

construction of reservoirs on Bhavani, Amaravathy or Noyyil, tributaries of Cauvery in the State of Madras; and also right was given to the State of Mysore to construct off-set reservoirs not exceeding 60% in capacity of the reservoirs constructed by the State of Madras on the aforesaid tributaries.

29. So far the claim for 46,600 acres is concerned, it is evident from Tamil Nadu Statement No.5, item No. II-b.ii(4) that an area of 46,600 acres under Samba (first crop) was reduced and replaced with Kuruvai crop, followed by Thaladi crop in the same extent of 46,600 acres. In other words, Tamil Nadu effected reduction in the first crop of Samba and substituted the same by two crops of paddy namely: Kuruvai and Thaladi. Karnataka has contended that this cannot be categorized as an extension of irrigation by improvement of duty. It cannot be disputed that in that event more water shall be required.

30. The practice of double crops in the same field during an agricultural season requires more water. The Gross Command Area (GCA) under any project minus the non- cultivable land is termed as Culturable Command Area (CCA) of a project. Such area becomes entitled to receive irrigation supplies. If during a year, the entire CCA is brought under cultivation and irrigation water is supplied to the entire cultivated area, the annual intensity of irrigation is said to be 100%. In some projects, where the availability of water is limited and the entire CCA cannot be irrigated in a year and only part of the CCA is provided with irrigation water, the intensity of irrigation would be less than 100%

and equal to the percentage of area of CCA brought under irrigation. For example, the Bhakra Canal System was initially designed at 78% intensity of irrigation.

31. In South India that portion of the CCA which is irrigable is termed as 'ayacut'. Further, if some portion of the CCA is sown twice during the same year (in different seasons under different crops) and that additional area is also given irrigation water, the annual intensity of irrigation would be more than 100%. If the additional area which has come under double cropping and received irrigation is 25% of the total CCA, the annual intensity of irrigation is deemed to be 125%. This is also described as Gross Annual Irrigation (GAI). In other words, if the total annual irrigated area is divided by the CCA, that ratio would give the annual intensity of irrigation of a project.

32. In areas where the cultivable land is more and availability of water is a constraint, the projects are designed to cover larger areas for cultivation of light irrigated crops. In other words, light irrigated crops in larger area can be covered by a quantity of water which can otherwise cover much less extent of area if high water consuming crops are raised. Since paddy cultivation is high water consuming crop it would cover smaller areas than semi-dry crops which need lesser water, the extent of area could some times be 2 to 3 times. In a country like India where the bulk of the population is engaged in agriculture for its livelihood, the Government policy is to cover as large an area as possible and this is termed as "extensive irrigation". On the other hand where small

percentage of population is engaged in agriculture, like in USA, the Governments prefer to encourage “intensive cultivation” which in other words, means having intensity of irrigation of more than 100%. In some cases, where the climate permits, annual intensity of irrigation of over 200% is also allowed. For example, in Kerala where land is a constraint they raise three crops whenever possible; it means their annual intensity of irrigation is 300%.

33. In the above context it would be pertinent to quote the observations of Dr Ambika Singh, Expert Agronomist engaged by Narmada Water Disputes Tribunal who has observed in his Report as under:-

“4.2 If available water can physically serve a large commanded area other considerations arise in selecting intensity of cropping. A high intensity of irrigation in such a case would benefit fewer farmers in a large measure than otherwise. This would accentuate social disparity in the farming community. Here the higher intensity would also not give any increased overall production as the gross irrigated area would be determined by the available irrigation supplies and not irrigation intensity. Thus, in such a situation lower intensities are called for.” (Reference Paragraph 4.2 page 82 of NWDT Report Volume I).

34. In a water deficit basin like Cauvery the annual intensity of irrigation is a very important factor and needs to be considered keeping in view the large number of small and marginal farmers and their livelihood. Although the States especially, Karnataka and Tamil Nadu have

proposed in several projects intensity of more than 100%, keeping in view the larger interest of the farming community it is proper to restrict annual intensity of irrigation to 100% and accordingly allow the extent of areas to be irrigated in each State depending upon the availability of water.

35. Apart from what has been said above, the opinion expressed by the CFFC, the Irrigation Commission, and the National Commission on Agriculture in respect of double crop in the same field in the States of Tamil Nadu and Karnataka has also to be taken note of. While discussing adequacy of irrigation supplies in CFFC report in respect of State of Karnataka at page 104, it has mentioned as under:-

“A study of the above would indicate the need for extensive agricultural reforms regarding conservation of water and the advantages of following more scientific methods of cultivation. Almost all the irrigated areas are growing paddy. In unirrigated areas, ragi is the predominant crop. If the khariff ragi could be grown under irrigated conditions instead of paddy, there would be saving in water without any economic detriment to the farmers, as it is understood that the net return is not far different in the case of paddy and ragi.”

“Further, long duration varieties of paddy are in vogue and there is scope for intensive research and introduction of short-term varieties. Such a step would enable follow-on crops which require considerably less quantity of water and keep the farmers busy for a longer period of the year.”

In the CFFC report it has been pointed in respect of Tamil Nadu:-

“In addition, the Kuruvai crop which is grown in about 25 per cent of the delta requires practically the same amount of water as

Samba crop, as indicated by the State officials. Most of the requirement of this crop has to be met from the storages causing a big drain. The 'Samba' crop of 180 days duration also goes well beyond December requiring storage facilities. The requirement is further enhanced by the Thaladi crop which is taken after the Kuruvai crop. Savings can be effected by:

- i) restricting the double crop paddy area;
- ii) introduction of a shorter duration variety in plakhe of 'Samba';
- iii) growing crops requiring less water.

These considerations would apply to all projects.”

[Emphasize supplied]

The above discussion in the CFFC report clearly indicates the necessity to restrict the double crop area as far as possible.

36. At the instance of the Chief Ministers of the Cauvery Basin States, the Govt. of India constituted an Expert Committee to make a study on the scope of economy in use of Cauvery waters. Sh. C.C.Patel, Additional Secretary, Ministry of Irrigation & Power along with Sh. P.R.Ahuja, Sh. B.R.Palta, as consultants, Dr. C. Daksinamurthy, Director Water Technology Centre and Sh. S. P. Gupta, Director, Central Water and Power Commission constituted an Expert Committee. In their report with reference to savings on account the diversification of crop the Committee has observed as under:-

“A study of the existing cropping pattern in the three States reveal that a very substantial percentage of the irrigated area in the basin is covered under paddy. Rice is a crop which has

least productivity with respect to water use being of the order of 3.7 Kg per mm of water as compared to 12.5kg per mm for wheat, 8.0 for maize and bajra and 9.0 for sorghum. The Cauvery Basin being a water short basin, it is necessary to reduce the area under irrigated paddy and grow other crops for obtaining maximum benefits from the available water resources. Paddy as a rule should be grown in heavy soils or those with hard pans and shallow depth scrupulously levelled and puddled to reduce permeability. The duration and type of paddy grown should also be such that makes the maximum use to precipitation occurring in the area.” (Ref. Exh.B-I, page 20 para 2.4.1)

Irrigation Commission 1972 as well as National Commission on Agriculture, 1976 have reiterated this matter as under. The Irrigation Commission, 1972 in para 19.17 has stated that:-

19.17 “Rice requires much more water than other cereals but its productivity per unit of area is much lower than that of others. The Commission, therefore, suggests that the need for adequate support from rainfall should be kept in view while planning for rice production. It further recommends that a second rice crop, particularly in non-rainy season should be grown in an area only if the irrigation supplies can not be put to better use.

[Emphasize supplied]

37. The National Commission on Agriculture, 1976 in their report Part-V – Resources development, chapter 15, Irrigation, in paragraphs 15.8.7 and 15.8.8 have said:-

15.8.7 “In the Southern States, wherever the heavier black cotton soil is located in the valleys and the lighter red soil

higher up, it would be a good arrangement to confine growing rice to the valleys reserving the lighter soils for light irrigated crops, as otherwise apart from consuming more water due to greater percolation losses, the percolated water would make the heavy soil lower down soggy rendering it unfit for growing any other crop than rice. This has happened on some existing projects, such as lower Bhavani, Tungabhadra, Hirakud, etc.

15.8.8 “We recommend, therefore, that rice should be grown preferably where there is good support from rainfall on soils which have a permeability less than 5 mm per day and lower down in valleys where generally there is heavy soil. Further, rice should be grown in non-rainy seasons or low rainfall areas only if the available irrigation supplies cannot be put to more economic use for other crops.”

[Emphasis supplied]

38. The above recommendations of National Commission on Agriculture was put to Dr. M.S.Swaminathan, Tamil Nadu, witness no. 4 who is in his answer to question no. 115 replied as under:-

“Yes, I agree with whatever you have read out.

Ques: Therefore, it would be correct to say – second sentence in para 15.8.8 – that rice should be grown in non-rainy season or low rainfall areas only if the available irrigation supplies cannot be put to more economic use for other crops.

Ans: Yes.

117. Ques: And that has been recommendation made by the National Commission on Agriculture.

Ans: Yes.

128. Ques: That is right. Thank you, now, would you agree that crops and cropping patterns in the Cauvery Basin both in Karnataka and in Tamil Nadu should be so planned as to take

the maximum support of the rainfall principally in Karnataka the south-west principally in Tamil Nadu the north –east?

Ans. Yes, I think to the extent we can harness rain water we must once as I mentioned earlier.”

39. In a proceeding for “equitable apportionment” as has been indicated earlier, each party State is entitled to receive a just and fair share of the available river supplies. The development of the principle of equitable apportionment had been gradual, from “Harmon Doctrine” to the ‘riparian rights” and finally to the principle of “equitable apportionment”. In the case of Cauvery basin we have considered the development of irrigation existing prior to 1924 as also further development of irrigation as agreed to by both the major States of Madras/Tamil Nadu and Mysore/Karnataka under the various terms of the 1924 agreement; of course, there were some clauses of the 1924 agreement; especially Rule 7 of Annexure I which placed restrictions on the operation of reservoirs. This aspect has been dealt with in sufficient details elsewhere and also the same was in the knowledge of both the States. Therefore, for equitable apportionment we cannot ignore the development of areas which were permitted to Karnataka or Tamil Nadu. Having examined the above two aspects and the water requirement therefor, we have to further consider the distribution of the remaining surplus waters in such a manner that each party State gets its fair and equitable share. In order to assess reasonable water requirements we have to first consider the extent of areas which have been already developed vis-a-vis the development permitted under the agreement; and

thereafter consider the just and fair claim for development of irrigation as placed by the party States before this Tribunal.

40. The total claim of the party States for development of irrigation in their territories far exceeds the availability of waters and therefore, some restrictions would be imperative. For example, in the State of Tamil Nadu, the entire development, past and future is based on paddy cultivation, which is a high water consuming crop and further they have almost reached the ultimate potential of their irrigation development by 1974, as is evident from the C.F.F.C report and also the claim of the State of Tamil Nadu placed before this Tribunal. As far as the State of Karnataka is concerned, in the past they had been growing paddy wherever they could get irrigation facility but could not complete the development as contemplated under the 1924 agreement by 1974. The State of Karnataka embarked on the construction of reservoir schemes, some years prior to the completion of 50 years of the 1924 agreement which was in the year 1974, and along with the progress of reservoirs kept on releasing waters to their newly opened areas for irrigation, and by the year 1990 their contemplated development was almost thrice in extent to the development achieved in 1974 and they also put forth that claim before this Tribunal in their Statement of case. Besides, they had also indicated several proposed projects. On the other hand in respect of Kerala, there was hardly any development of irrigation except under minor irrigation in a total area of about 50,000 acres till 1990; their plea was that the Government of India did not clear their projects for irrigation

because of the pending Cauvery water dispute; and the State of Kerala had approached the Central Government for setting up a Water Dispute Tribunal for adjudication. Before this Tribunal they have placed a demand for ultimate development of irrigation in an extent of 3.8 lakh acres of land within the Cauvery basin.[Ref. Kerala Statement of case, page 28, paragraph 2.10.3]. Thus, keeping in view the above position of development and the claims of the various parties, a considered and conscious decision has to be taken about the extent of development which could be allowed to the party States and the crop water requirement therefor so that a fair and reasonable allocation of the available surplus water becomes possible.

41. As already mentioned most of the development in Tamil Nadu is based on paddy cultivation whereas the bulk of the demand put forth by the State of Karnataka is for raising semi-dry-crop in their new project areas. Semi-dry crop needs much less quantum of water per acre of crop in comparison to paddy cultivation. Under equitable distribution it is also one of the considerations that the existing development of irrigation may be kept in view as far as possible.

42. The possibility of distributing the remaining surplus waters amongst the States of Kerala, Karnataka and Tamil Nadu and the Union Territory of Pondicherry has been examined in such a way that equity and fair play are achieved both in the areas to be provided with irrigation facilities as also the quantum of water for them. Keeping this in view, the double crop developed beyond the provisions of 1924 agreement

whether in Tamil Nadu or in Karnataka could not be taken note of. This single decision would go a long way in making available the water to meet the genuine needs of the riparian States. The consideration of equity would indicate that the farming families should at least be having one single crop which they can raise for their livelihood with the support of irrigation facilities and thereby derive the benefit from the natural river water resources which is common to all.

43. The paddy crop should be so planned as to take maximum advantage of rainy season in the Cauvery basin area. However, the areas over which second paddy crop was being grown prior to the Agreement of 1924 as well as second crop permitted by the terms of the Agreement of the year 1924 by way of extension stand on a different footing. Same will be the position in respect of Karnataka.

44. It will be relevant to mention that for the first time, in the Statement I(C) filed by Tamil Nadu on 5.10.2004, the area of 301,000 acres as stipulated in clause 10(v) of the agreement was shown in two blocks. In the statement 1(C) aforesaid, an area of 2.560 lakh acres was shown to have been developed under Grand Anicut Canal and 0.45 lakh acres was shown to have been developed under Mettur canals; total thereof shall be 301,000 acres. An objection was taken on behalf of the State of Karnataka that part of the area of 3.01 lakh acres could not have been developed in Mettur canals and to that extent there has been a violation of the terms of the agreement. Under the spirit of the agreement, 3.01 lakh acres could have been developed under Cauvery Mettur Project

area. There is nothing to show from the agreement that the area of 3,01,000 acres should be developed at one place only. In this background the area of 45,000 shall be treated as part of 3.01 lakh acres. So far the Navarai crop which was existing prior to 1924 being a summer paddy crop is not to be taken note of. However, Tamil Nadu may substitute the same with any semi-dry crop.

45. There is no mention of any extension in Anicut channels either in the Agreement or in any of the Annexures to the agreement. As such no note is taken of the claim for 0.765 lakh acres in clause II (e) by improvement of duty in the Anicut channels. The area of 0.765 acres cannot be included in the Category II. However the new area of 0.480 lakhs developed under 1st crop shall have to be considered on merit if water is available as mentioned earlier.

46. The claim for an area of 0.699 under minor irrigation in clause II (f) cannot be discussed at this stage because there is no mention regarding minor irrigation in the agreement. However, the entire demand for minor irrigation both by Karnataka and Tamil Nadu for the area developed between 1924 and June 1990 shall be considered separately.

47. Tamil Nadu had claimed under Category II (c) and (d) of Statement (Marked-I) an area of 2.285 lakh acres developed under Clause 10(xiv) of 1924 Agreement. Later in Statement 1C it has been raised to 2.634 lakh acres. It is note worthy that Clause 10(xiv) does not mention either the capacity of the new reservoirs to be built by Madras on the Bhavani, Amaravathy or Noyyil or prescribes the extent of

area to be developed under this clause. The clause only mentions that, should Madras take any action under this clause to construct any reservoirs, Mysore will be entitled to construct an offset reservoir of a capacity not exceeding 60% of the new Madras reservoirs. The area claimed by Tamil Nadu originally in Statement 1 under Bhavani and Amaravathy projects is 2.070 lakh acres and 0.215 lakh acres respectively. The total being 2.285 lakh acres. Tamil Nadu in the common format submitted before the Tribunal, has mentioned that the effective capacity of Lower Bhavani reservoir is 32.05 TMC (Ref: TNDC Vol. XI, page 93) and that of Amaravathy reservoir is 3.97 TMC (Ref: TNDC Vol. XI, page 109). The development of irrigation as provided under Clause 10(xiv) will be covered under Priority-II (c) and (d) of Tamil Nadu's Statement marked I. The claim for 2.285 lakh acres has also been admitted by Karnataka in its KAR Note No.20 at page 44, paragraph 8 saying:

“TN has claimed 2.28 lakh areas on tributaries as covered by cl.10xiv just as Karnataka is entitled to extend on tributaries for storage and irrigation on Kabini and Suvarnavathy as off-set also under cl.10xiv.”

48. Here, it will be pertinent to mention that Clause 10(xiv) of the Agreement provided that should Madras constructs any reservoirs on Bhavani, Amaravathy or Noyyil then Karnataka will be entitled to construct offset reservoirs in lieu thereof. The State of Tamil Nadu have constructed reservoirs on Bhavani and Amaravathy prior to 1974 and claimed an area of 2.285 lakh acres under the same. However, they

(Tamil Nadu) have later on constructed two reservoirs on the river Noyyil namely: Athupalayam – 9,600 acres and (ii) Orathupalayam – 10,400 acres, total 20,000 acres, but after 1974, and have claimed under Priority-V under “other areas developed after 1974 under the ongoing and proposed projects”. The aforesaid area of 2,28,500 acres can be claimed under clause 10(xiv). But the balance of 34900 cannot be accepted.

49. In this connection, it would be pertinent to refer to Tamil Nadu Statement 1(C), page 9, where under Priority II(C) Item (i), (ii), (iii) in respect of Kodivery Anicut, Kalingarayan Anicut and Old Amaravathy Channels, the details of first crop and second crop are given which are reproduced below:-

		<u>Figures in lakh acres</u>	
		<u>1st Crop</u>	<u>2nd Crop</u>
(i)	Kodivery Anicut	0.048	0.225
(ii)	Kalingarayan Anicut	0.020	0.034
(iii)	Old Amaravathy Channels	<u>0.022</u>	<u>--</u>
	Total...	0.090	0.259
	Grand Total (1 st +2 nd crop) = 0.349 lakh acres		

It is seen from the above details that the area under first crop is extension by way of bringing in new area under irrigation under existing systems totaling 9,000 acres; whereas, the second crop raised in an area of 25,900 acres cannot be taken note of as a policy. As regards the development of new area of 9,000 acres, the same needs to be considered on equity at a later stage.⁵⁰ Statement showing details of areas entitled for development in the State of Tamil Nadu as per provisions of 1924 agreement is given below:

STATEMENT SHOWING DETAILS OF AREA ENTITLED FOR DEVELOPMENT IN
THE STATE OF TAMIL NADU AS PER THE PROVISIONS OF 1924 AGREEMENT

Unit in Th. acres

II) Areas entitled under 1924 Agreement:					
i) Under Clause 10(v):					
a) Cauvery Mettur Project	301.00	20.00	321.00	E-104(c), page 102, Col. Ellis Project Report 1921, page 2	Breakup of 3.01 lakh acres under GA canal 2.56 + Mettur Canal 0.45, Ref. Clause 10(v). Under Mettur canals, the entire area of 0.45 lakh acres is under first crop with no second crop under this project.
b) Old delta second crop	-	70.00	70.00		
Sub-Total (i)	301.00	90.00	391.00		
ii) Under Clause 10(xiv):					
a) Lower Bhawani Project	207.00	--	207.00	TNDC Vol.XI, page 1 & 93.	Under first turn, paddy crop is allowed in 1.035 lakh acres (50%) area and second turn dry crop in 1.035 lakh acres.
b) Amaravathi Reservoir	21.50	-	21.50	TNDC Vol. XI, page 1 and E-18, page 45, net irrigated area shown as 21,500 acres.	-
Sub-Total (ii)	228.50	--	228.50		
Total (II)	529.50	90.00	619.50		

51. Tamil Nadu has almost developed its full irrigation in the Cauvery basin before 1974, since they were getting copious flows under the rules of regulation framed in respect of Krishnarajasagara reservoir-Annexure I to the Agreement of the year 1924, especially Rule 7 thereof. While examining the issue of apportionment of waters of an inter-State river the past uses of one riparian State has to be considered in context of the reasonable requirement of other riparian States. It is interesting to note that even CFFC has assessed that Karnataka was utilizing only 177 TMC of water and Kerala 5 TMC of water, the total being 182 TMC in the year 1971. (Ref: TN Note-31, page 3).

52. The Tribunal is not considering the area on the basis of categories as suggested by Tamil Nadu. This Tribunal has to examine the share of

the different riparian States on the 'just and equitable principles' as said by the Supreme Court relating to this very dispute, then that question has to be examined with reference to the needs of the different riparian States, keeping in view the equity as also the livelihood of farming families. Thus the total area of 15.193 lakh acres (including Anicut channels and Minor irrigation) developed before 1924 claimed under Category I and the area of 6,19,500 acres (3,91,000 + 2,28,500) under Category II (a), (c) and (d), developed under the 1924 Agreement with a combined claim under Category I and II (a), (c) & (d) aggregating to 21.388 lakh acres is appended below:

**STATEMENT SHOWING THE DETAILS OF AREA TO BE CONSIDERED
UNDER CATEGORY-I & II FOR THE STATE OF TAMIL NADU**

Units in Th. acres					
Project	1st Crop	2 nd Crop	Total	Reference	Remarks
1	2	3	4	5	6
I) Pre-1924 Agreement:					
i) a) Old Delta (Cauvery & Vennar Sub-basins)	861.67	87.50	949.17	TNDC Vol.XI, page-1	Karaikal area of Pondicherry not included in old delta figures.
b) Lower Coleroon Anicut (LCA)	112.00	7.60	119.60	TNDC Vol.XI, page-1.	-
c)Area above upper Anicut:				TNDC Vol. XI, page-1.	
1. Kattalai System	43.90	10.97	54.87	Item 4 to 9	Second crop Navarai Feb-June
2. Kodiveri Anicut	19.70	2.00	21.70	-	-do-
3.Kallingarayan Anicut	12.00	10.60	22.60	-	-do-
4. Salem Tiruchi Channels	55.70	26.18	81.88	-	-do-
5. Old Amaravathi Channels	29.00	4.35	33.35	-	-do-
6. Noyyil River Channels	14.80	2.30	17.10	-	-do-
Sub-Total (c)	175.10	56.40	231.5	-	-
ii) Minor Irrigation	219.02	-	219.02	TNDC Vol.XI, page-2.	-
Total	1367.79	151.50	1519.29	-	-

1	2	3	4	5	6
II) Areas contemplated under 1924 Agreement:					
i) Under Clause 10(v):					
a) Cauvery Mettur Project	301.00	20.00	321.00	E-104(c), page 102, Col. Ellis Project Report 1921, page 2	Breakup of 3.01 lakh acres under GA canal 2.56 + Mettur Canal 0.45, Ref. Clause 10(v). Under Mettur canals, the entire area of 0.45 lakh acres is under first crop with no second crop under this project.
b) Old delta second crop	-	70.00	70.00		
Sub-Total (i)	301.00	90.00	391.00		
ii) Under Clause 10(xiv):					
a) Lower Bhawani Project	207.00	--	207.00	TNDC Vol.XI, page 1 & 93.	Under first turn, paddy crop is allowed in 1.035 lakh acres (50%) area and second turn dry crop in 1.035 lakh acres.
b) Amaravathy Reservoir	21.50	-	21.50	TNDC Vol. XI, page 1 and E-18, page 45, net irrigated area shown as 21,500 acres.	-
Sub-Total (ii)	228.50	--	228.50		
Total (II)	529.50	90.00	619.50		
Total (I)+(II)	1897.29	241.50	2138.8	Say 21.388 lakh acres	

Areas developed/under ongoing development in the State of Tamil Nadu beyond the entitlement contemplated in the 1924 Agreement between 1924 and 1990

53. The State of Tamil Nadu in their Statement of Case TN-1 had claimed that their total irrigation in Cauvery basin in the year 1972 within Tamil Nadu was 28.208 lakh acres (gross) [Ref: TN-1, page 66, para 41(a)]. The same figure has been indicated in the CFFC report in TNDC Vol. XV, page 157. Further, it has also been clarified that this gross area of 28.208 lakh acres included 43,000 acres of gross irrigation within Karaikal region of UT of Pondicherry. Also, an area of 2.909 lakh acres of minor irrigation within Tamil Nadu was included in the above area.

54. During the course of arguments, the State of Tamil Nadu had submitted Statement No.4 on 12.8.2004 wherein the areas existing prior to 1924 and developed upto 1974 under the terms of agreement has been indicated as 27.351 lakh acres which did not include the area

coming under Pullambadi and New Kattalai Schemes which were developed as “flood flow” schemes prior to 1974 covering an area of 0.463 lakh acres giving a total of 27.814 lakh acres which almost tallies with the CFFC’s figures (CFFC figure 27.778 lakh acres). Further, the statement shows other areas developed after 1974 and those ongoing and proposed projects totaling to 1.455 lakh acres. The details of these schemes are given in the Working Sheet No.4 of Statement No.4. It is seen that except Nanganjiar reservoir project which was ongoing all other schemes were complete by 1990 as is seen from the Common Format (Ref: E-18, page 5 and E-19, page 192-193). Therefore, the total claim of Tamil Nadu comes to 29.269 lakh acres, and this very claim is also indicated in their TN Vol. 47, Exh. 1665, page 55 and 56 as under:-

Minor irrigation 3,44,500 acres at page 47 and
25,82,400 acres at page 56, total 29,26,900 acres.

55. The State of Tamil Nadu during the course of arguments submitted several statements covering development under different periods suggesting order of priorities. However, for our purposes, we have grouped the development of irrigation in areas as under:-

- (i) Development prior to 1924;
- (ii) Development permitted under different clauses of the 1924 Agreement; and
- (iii) Other areas developed or committed for development outside the 1924 Agreement upto June, 1990.

The areas coming under (i) and (ii) have already been discussed which are as under:-

(i) Existing prior to 1924	-	1519.29 Th. Acres
(ii) Area permitted to be developed- under 1924 Agreement.		619.50 “ “ ----- 2138.79 Th. Acres

Thus, the balance area out of their total claim of 2926.90 th. acres namely: $2926.90 - 2138.79 = 788.11$ th. acres will now have to be examined based on merit and equity. While doing so, the following criteria have been kept in view for the purpose of assessment of areas needing irrigation.

- 1) No note is being taken of the double crop/perennial crop de-hors 1924 Agreement.
- 2) No area for summer paddy is to be considered.
- 3) The area where summer paddy was being raised prior to 1924 to be replaced by semi-dry crop.
- 4) The annual intensity of irrigation to be restricted to 100%.
- 5) The cropping period to be restricted within irrigation season from 1st June to 31st January.
- 6) Ambitious Lift Irrigation Schemes to be discouraged.

56. Now, it has to be examined as to which areas are to be considered based on merit and equity as indicated above under individual projects. The projectwise details are available in TNDC Vol. XI, as also in the Common Format Vol. E-18, pages 129 to 133. Based on this information, Tamil Nadu has furnished the schemewise area and crop details in their Exh. No.1665 (page 55 & 56) which are being examined hereunder in that order:-

A. **Systems fed by Mettur:**

1. Cauvery Delta System:

The State of Tamil Nadu has claimed a gross area of 12.470 lakh acres comprising of Kuruvai, Samba and Thaladi crops. The ayacut area is covered by Kuruvai and Samba crops which is $4.250+4.820=9.070$ lakh acres and Thaladi which is a second crop is being claimed in 3.400 lakh acres (Ref: TNDC Vol. XI, page 7-8).

It has been already examined double crop area as existing prior to 1924 and as agreed to as per terms of 1924 Agreement which was as under:-

Cauvery delta system 87,500 acres, Lower Coleroon Anicut 7,500 acres, total 95,000 acres in pre-1924 era and 70,000 acres will be in Cauvery delta system and 20,000 acres in Cauvery Mettur project (G.A. Canal). Therefore, as far as Cauvery delta system is concerned, double crop area would be 1,57,500 acres (87,500+70,000). Thus for Tamil Nadu, 1,57,500 acres under Kuruvai and Thaladi crops each has been considered.

As regards the single crop area, the entire ayacut of Cauvery delta system will comprise of Kuruvai and Samba area. The State of Tamil Nadu according to their Statement No.V, filed on 13.8.2004, have claimed Cauvery delta ayacut as 9.07 lakh acres. The breakup of this area as indicated by the State is 8.900 lakh acres existing prior to 1924, and extension of new area by 17,000 acres. However, during the course of arguments, it was brought out that area under

Salem-Tiruchy Channels as given in the Administrative Report of 1923-24 and exhibited as Karnataka Vol. XXXV, Exh. 356 works out to 37,334 acres (35,133 + 2,201) which will have to be deducted from the Cauvery delta area. Further, as per the second revised report of Cauvery Mettur project (1921) of Col. Ellis, the ayacut of Cauvery delta system works out as 8.99 lakh acres as below:-

Total ayacut	-	10.38 lakh acres
Less: LCA area	-	1.12 “ “
Less: Karaikal area	-	<u>0.27</u> “ “
Total	-	8.99 lakh acres

The remaining 8,000 acres (9.07 – 8.99) will have to be considered on merit; this extension of ayacut seems reasonable and is allowed.

As regards the duplicate area of 37,334 acres coming under Salem-Tiruchy channels which was accounted for twice, the same shall have to be deducted from the old delta ayacut; thus, the correct figure of ayacut of Cauvery delta system works out as $8.99 + 0.08 - 0.373 = 8.697$ lakh acres.

2. Lower Coleroon Anicut:

Under this project, Tamil Nadu has claimed gross irrigated area of 1.631 lakh acres, comprising Kuruvai 0.308 lakh acres, samba 1.015 lakh acres = 1.323 lakh acres as ayacut; and thaladi (II crop) in 0.308 lakh acres (Ref: TNDC Vol. XI, page 15-16).

The gross area under irrigation prior to 1924 is indicated as 119.60 thousand acres gross, comprising 112.00 thousand acres

of first crop i.e. ayacut; and 7.60 thousand acres of second crop (Ref: TNDC Vol. XI, page 1). The State of Tamil Nadu during the course of final arguments have claimed gross area of 163.10 th. acres under the 1924 Agreement which they had developed before 1974 (Ref: TN Exh. 1665, page 55, item A(2)). Thereby, they have developed gross irrigation in an area of 43,500 acres – the breakup of this is given in their Statement No.4, working sheet 3, submitted on 12.8.2004 as under:-

“II(b)(ii) Anicut Channels:

Lower Coleroon Anicut System – 1 st Crop Kuruvai:	23,200 acres
1 st Crop Samba: (-)	2,900 “
2 nd Crop Thaladi:	<u>23,200</u> “
Total	43,500 acres”

From the above, it is clear that by reducing samba crop in 2,900 acres and raising Kuruvai in 23,200 acres, they have increased new ayacut in 20,300 acres. As such, this development limited to ayacut only merits consideration and the same is being allowed and increase in thaladi i.e. second crop in 23,200 acres is not taken note of. Hence, the total gross area which is considered under Lower Coleroon would be 139.90 th. acres (119.60 + 20.30) against 163.10 th. acres claimed by the State.

3. Salem-Tiruchy Channels:

The State of Tamil Nadu in their Exh. 1665 have claimed a gross area of 1.126 lakh acres under Salem Tiruchy Channels comprising of 0.713 lakh acres of samba crop i.e. ayacut and

0.413 lakh acres of Navarai crop which is a summer paddy crop. These figures are also reflected in TNDC Vol. XI, pages 55-56. Prior to 1924, based on the Administrative Reports, the ayacut of Salem Tiruchy Channels was 55,700 acres which has been allowed under samba crop and 26,180 acres was under Navarai crop which is proposed to be replaced by a semi-dry irrigated crop. As such, a gross area of 81,880 acres has already been considered as existing prior to 1924. Now, the claim of Tamil Nadu for an additional area of 24,600 acres is to be considered – comprising of 15,600 acres of samba i.e. first crop and 9,000 acres of Navarai i.e. second crop. Keeping in view the shortage of supply, we are not taking note of 9,000 acres under Navarai which is a second crop and only 15,600 acres of first crop i.e. samba is being considered as an extension of ayacut of Salem Tiruchy Channels under merit and equity.

4. Kattalai Scheme:

Under this scheme, Tamil Nadu has claimed 1.222 lakh acres comprising of 76,300 acres as first crop of samba and 45,900 acres as second crop i.e. Navarai (Ref: TNDC Vol. XI, page 31-32). However, during the pre-1924 era, the ayacut was 43,900 acres under samba crop and 10,970 acres as second crop Navarai based on the Administrative Reports which has already been considered under the pre-1924 areas. Thus, a gross area of 54,870 acres (43,900+10,970) has already been considered.

Now, the claim of Tamil Nadu of 32,400 acres under first crop samba and 19,500 acres under second crop Navarai as given in their Statement No.4, Sheet No.3 as claimed to have been developed under 1924 Agreement needs to be examined. It is noticed that the increase in Navarai crop of 19,500 acres cannot be taken note of and only the remaining ayacut of 32,400 acres by way of extension brought under first crop of samba needs to be considered under merit and equity which according to us, seems reasonable.

5. Cauvery Mettur project (G.A. Canal) and Mettur Canal:

Under the 1924 Agreement, Clause 10(v), Tamil Nadu was permitted to develop new irrigation in an area of 3,01,000 acres of ayacut and in addition, an area of 20,000 acres as second crop, total being 3,21,000 acres. This area has already been allowed to them in the previous statement of areas permitted under 1924 Agreement. (Ref: TNDC Vol. XI, page 85 and page 104)

The State of Tamil Nadu has now claimed in their Exh. 1665 an area of 3,67,600 acres (3,22,600 acres under Cauvery Mettur project + 45,000 acres under Mettur Canal). Thus, an additional area of about 46,600 acres (367,600 – 321,000) under second crop has been claimed by Tamil Nadu under Cauvery Mettur project (Ref: TN Statement 4, sheet-3). This development is of second crop – they have reduced samba cultivation by 46,600 acres and raised two crops of Kuruvai and thaladi in that area.

Since we have decided not to take note of any new area under second crop, this addition in area of 46,600 acres claimed by Tamil Nadu is not being considered.

6. New Kattalai High Level Canal and Pullambadi Canal:

These two schemes were got approved from the Planning Commission under the condition that the crops will be raised only from flood flows. The areas approved under each of the schemes were as under:-

(i)	New Kattalai High Level Canal -	20,600 acres
	(Ref: TNDC Vol.XI, page 118 and E-18, page 132)	
(ii)	Pullambadi Canal -	<u>22,100</u> acres
	(Ref: TNDC Vol. XI, page 126 and E-18, page 132)	
	Total	<u>42,700 acres</u>

However, the State of Tamil Nadu in their Exhibit 1665 dated 8.7.2004 have claimed these two schemes for an aggregate area of 46,300 acres (New Kattalai 23,000 acres and Pullambadi 23,300 acres).

Even though, Tamil Nadu had got these schemes approved based on “flood flows” in the year 1956 and completed in the year 1959, the farmers owning land in the command of these schemes have developed their lands and have been raising crops for a long time when they were receiving copious flows, it does not seem to be justified to disturb their livelihood after they have been deriving benefits all these years.

However, it is appropriate that for raising single paddy crop under merit, areas originally planned under these schemes namely: New Kattalai High Level Canal 20,600 acres and Pullambadi Canal 22,100 acres be considered.

7. Sethiathope Anicut System (Supplementation):(E-18, page 129)

The State of Tamil Nadu has claimed a gross area of 60,600 acres under Sethiathope scheme which is outside the Cauvery basin. Since this area falls outside Cauvery basin, the same is not being taken note of under the areas within the basin. Also the request for supplementation of supplies to the areas under this scheme is not taken note of which falls outside Cauvery basin.

B. Basin above Mettur:

Thoppaiar Reservoir Scheme: (E-18, page 132)

Thoppaiar reservoir scheme was taken up in the year 1980 and completed in 1986. Thoppaiar is a direct tributary of Cauvery which joins the main river above Mettur reservoir on the left bank. The scheme covers an ayacut of 5,300 acres which the State proposes to cover with 200% intensity of irrigation raising semi-dry crop in both the seasons. We cannot allow intensity of irrigation of more than 100% annually. As such, an area of 5,300 acres under this project has been considered for raising one semi-dry crop (Ref: Exh. E-102, page 49-50).

C. Bhavani Sub-basin:**1. Kodivery Anicut System: (E-18, page 130)**

This is an old anicut system where two crops of paddy were being raised – first crop of samba in 19,700 acres and second crop of Navarai in 2,000 acres. Since Navarai is a summer crop, we have suggested replacement of Navarai crop with any semi-dry irrigated crop and an area of 21,700 acres has been considered under the areas covered during pre-1924 era. However, the State of Tamil Nadu have claimed extension of first crop area under samba in 4,800 acres (ayacut) and extension of second crop i.e. Navarai in additional 22,500 acres. We are not taking note of extension of second crop. As such, the area of 22,500 acres claimed under Navarai is not considered, but the extension of ayacut under the first crop samba in an area of 4,800 acres only is being considered on merit and allowed.

2. Kalingarayan Anicut System: (E-18, page 130)

Again, this is a very old anicut system in which an ayacut of 12,000 acres was under irrigation and first crop of samba was being raised. In addition, second crop of Navarai in an area of 10,600 acres was also being raised. These figures of the two crops are also reflected in the Administrative Report of 1923-24 (Ref: KAR Vol. XXXV, Exh. 356, page 6). Accordingly, an area of 22,600 acres has been allowed under Kalingarayan Anicut system

which was under irrigation prior to 1924 but replacement of Navarai crop with irrigated semi-dry crop has been suggested.

Further, the State of Tamil Nadu has extended ayacut by about 2,000 acres and have indicated that first crop of samba is being raised in the same which is being allowed. In addition, they have also claimed an area of 3,400 acres under second Navarai crop which is not considered for reasons quoted earlier. (Ref: TN Statement 4, Sheet No.3).

Thus, the total area under Kalingarayan Anicut System will be first crop in the entire ayacut of 14,000 acres (12,000 old ayacut + 2,000 extension) and second semi-dry crop in an area of 10,600 acres.

3. Lower Bhavani Reservoir Project:

This scheme was constructed by the then Madras Govt. under provisions of Clause 10(xiv) of the 1924 Agreement and has accordingly been dealt with earlier. It may however be mentioned that this project was designed for raising irrigated dry crop in the entire ayacut of 2.07 lakh acres; but the farmers started raising paddy in the command for which the water was not adequate. Therefore, the State Govt. later on ordered to operate this scheme by turns under which 50% ayacut was allowed to raise paddy crop during the first turn and the remaining 50% was to grow semi-dry crop. (Ref: TNDC Vol. XI, page 93 to 98)

4. Other Minor Schemes:

The State of Tamil Nadu have claimed that three minor schemes in the Bhavani Sub-basin covering an area of 8,000 acres under single semi-dry crop are existing. (Ref: Common Format Information E-18, pages 5, 86, and 133). These schemes are also reflected in TN Exh. 1665 – Page 55. The schemes are located in Sathyamangalam, Gobi and Bhavani taluks of Periyar district. These schemes are therefore being considered under merit.

D. Amaravathy Sub-basin:

1. Old Amaravathy Channels: (E-18, page 130)

The State of Tamil Nadu have claimed that prior to 1924, an ayacut of 29,000 acres under first samba crop and an area of 17,300 acres under second crop of Navarai were existing. However, keeping in view the figures reflected in the Administrative Reports, the area under Navarai crop has been reduced from 17,300 to 4,350 acres, the II crop area has further been replaced with semi-dry crop as explained earlier while discussing pre-1924 areas. Thus, irrigated area as in 1924, a total area of 29,000 + 4,350 acres has already been considered.

The State of Tamil Nadu have further claimed that they have extended 1st crop area by 2,200 acres under this scheme prior to 1974 (Ref: TN Statement No.4, Sheet No.3) which is also reflected in their Common Format Information. This extension of

small area of 2,200 acres in the ayacut of various Amaravathy channels seems justified and has therefore been considered on merit.

2. Amaravathy Reservoir Project: (Ref: E-18, page 132)

Under this reservoir project, Tamil Nadu has claimed a total area of 21,500 acres which is under diversified cropping system as under:-

		(In Acres)
Samba	-	12,000
Irrigated dry crop	-	3,300
Cotton	-	3,200
Sugarcane	-	3,000

Since sugarcane is a high water consuming crop, the same has been disallowed and its area included under samba crop. With this change, the total area of 21,500 acres has already been considered under the terms of the agreement.

3. Palar Porandalar Reservoir Project: (E-18, page 132)

This project was taken up by Tamil Nadu in the year 1970 and completed in 1978 for providing irrigation in 9,700 acres for semi-dry crop. The live capacity of the reservoir is 1.4 TMC. It is seen from Exh. E-102, page 45-46 that generally, water has been available to meet the planned rabi semi-dry crop area, although in some years, the flows have been in short fall. Keeping in view that the waters of the Cauvery are being allocated with 50%

dependability and the State is proposing single semi-dry crop, the same is being allowed on merit.

4. Vattamalaikarai Odai Reservoir Project: (E-18, page 132)

This project was taken up in the year 1974 and completed in 1978 for covering an ayacut of 6,000 acres for semi-dry crop during rabi season with a water requirement of about 0.5 TMC. From Exhibit E-102, page 47-48 which gives flow data for the four years from 1992-93 to 1995-96, it is seen that except for one year i.e. 1994-95, there was hardly any flow into the reservoir. From the factual data furnished by the State, it is clear that this reservoir scheme is not successful to irrigate 6,000 acres as planned. As such, keeping in view the short fall of the inflows, the scheme can at the most cover an area of 2,500 acres on proportionate basis. Accordingly, we are inclined to consider this scheme for 2,500 acres only.

5. Kodaganar Reservoir Project: (E-18, page 133)

This scheme was taken up in the year 1984 and completed in 1991 in Amaravathy sub-basin to cover an ayacut of 9,000 acres under single semi-dry crop during rabi season because the reservoir receives water during northeast monsoon only. The inflow details given in the Common Format Information at page 55 indicate that there are sufficient inflows in this reservoir scheme. As such, the area could be irrigated under this project as planned and is being allowed on merit.

6. Nanganjiar Reservoir Project: (E-18, page 7)

The State Govt. had taken up this reservoir scheme in the year 1990 to cover an area of 6,200 acres in Amaravathy sub-basin under single semi-dry crop. In the Common Format Information submitted before this Tribunal in the year 1993, the State had indicated that this was the only ongoing irrigation project. We are inclined to consider this project on merit, since the same is to cover dry areas located in the Amaravathy sub-basin.

7. Other Minor Schemes:

The State of Tamil Nadu have claimed that three minor schemes in the Amaravathy sub-basin covering an area of 4,400 acres were existing in the Vedasandur and Palani taluks of Dindugal Anna district. The area under first crop was paddy 1,000 acres, irrigated dry crop in 3,000 acres and second paddy crop in 400 acres. We are not considering second paddy crop in 400 acres and an area of only 4,000 acres under single semi-dry crop is being allowed. (Ref: E-18, pages 5, 86 and 133).

E. Noyyil Sub-basin:

1. Noyyil River Channels:

The State of Tamil Nadu have in their Common Format Information Exhibit E-18, page 32-33, furnished details of Noyyil river channels; there are 22 anicuts across the Noyyil river. Ayacut under these 22 river channels is reported to be 14,800 acres. In the ayacut of most the channels only one crop namely

Samba is grown. However, in about 2,300 acres, Navarai crop has also been indicated giving the gross irrigation in 17,100 acres.

These very figures of cropping are also indicated in the report of the CFFC in TNDC Vol.XV, page 156, item 9. It is mentioned therein that these channels were in existence even during the year 1901. Thus these are very old channels serving ayacut ranging from 50 acres to 3,933 acres; however, in most of the channels ayacut is less than 1000 acres. Since these are very old channels, we are allowing the gross irrigation in 17,100 acres with a modification that second crop of Navarai in 2300 acres will be replaced with any semi-dry crop . These areas have already been considered under the pre-1924 period.

2. Noyyil Reservoir Project (Athupalayam Reservoir):

This scheme is reported to have been taken up in the year 1981 and was completed in 1987; the project is located in Karur taluk of Tiruchy district covering an ayacut of 9,600 acres under single semi-dry crop with 100% intensity of irrigation. The available flows indicated in Exh. E-102 at pages 52-53 show that water is available almost in every year, therefore the area planned for irrigation is being allowed on merit. (Ref: Exh.E-18, pages 4, 85 & 133 – item 19)

3. Orathupalayam Reservoir Scheme

This scheme was taken up in 1984 and was completed in the year 1991 for irrigating an ayacut of 10,400 acres in

Perundurai and Karur taluks of Tiruchy district. The project is planned for raising single semi-dry crop with 100% intensity of irrigation and hence being considered under merit. (Ref. Exh. E-18, page 4, 85, 133 – item 21)

F. Other Minor Schemes:

Minor schemes above & below Mettur:

The State of Tamil Nadu in the Common Format Information Exh. E-18 page 133 have furnished details of six minor schemes. Three above Mettur reservoir and three schemes below Mettur reservoir. The schemes above Mettur cover an ayacut of 6,000 acres under first semi-dry crop. However, they are raising second paddy crop in 1,900 acres and second semi-dry crop in 2,000 acres. It is felt that only single semi-dry crop in 6,000 acres would be justified. Similarly, in the other three schemes below Mettur, a single irrigated dry crop in the entire ayacut of 7,800 acres appears justified deleting paddy cultivation in 1,800 acres. Thus, the total crop area under these schemes would be 13,800 acres against 17,700 acres claimed by the State.

Minor Irrigation:

57. As mentioned earlier, the 1924 Agreement does not speak of any development under the minor irrigation works. However, both the party States namely: Karnataka and Tamil Nadu have developed minor irrigation works in the Cauvery basin within their respective territories to meet the demands of small and marginal farmers. The State of Tamil

Nadu has developed 2.19 lakh acres under minor irrigation prior to 1924 as given in TNDC Vol. XI, page 2, item 43 which was gradually increased to 2.909 lakh acres by 1972 which is also indicated in the CFFC report (TNDC Vol. XV, page 157). It appears that the development under minor irrigation has been continuous as the State of Tamil Nadu has claimed an area of 3,44,500 acres in the Common format information. (Ref: E-19, pages 192-93). This claim under minor irrigation is also reflected in their Statement No.1A submitted on 30.9.2004. Thus, their claim for 1.25 lakh acres (3.445 – 2.190 lakh acres) under minor irrigation developed between 1924 and 1990 is being allowed on merit, as minor irrigation provides sustenance to the small and marginal farming families scattered all over the basin. This figure also tallies with the Common Format Information submitted by the State vide Exhibit E-19, page 192-193. The overall projectwise details of the area considered on merit and equity for the State of Tamil Nadu are given below:-

		Figures in acres
1.	Cauvery Delta System	8,000
2.	Lower Coleroon Anicut	20,300
3.	Salem-Tiruchi Channels	15,600
4.	Kattalai Scheme	32,400
5.	New Kattalai High Level Canal & Pullambadi Canal	42,700 (20,600+ 22,100)
6.	Thoppiar Reservoir Scheme	5,300
7.	Kodivery Anicut System	4,800
8.	Kallingarayan Anicut System	2,000
9.	Other Minor Schemes (Bhavani Sub-basin)	8,000
10.	Old Amaravathi Channels	2,200
11.	Palar Porandar Reservoir Project	9,700
12.	Vattamalaikarai Odai Res. Project	2,500
13.	Kodaganar Reservoir Project	9,000
14.	Nanganjiyar Res. Project	6,200

15.	Other Minor Schemes (Amaravathy Sub-basin)	:	4,000
16.	Noyyil Reservoir Project (Athupalayam Reservoir)	:	9,600
17.	Orathupalayam Res. Project	:	10,400
18.	Other Minor Schemes above & below Mettur.	:	13,800
			2,06,500
	Total		2,06,500 acres

Thus, the projects undertaken by Tamil Nadu outside the provisions of the agreement of 1924 as indicated by them and examined under merit cover an area of 2,06,500 acres.

58. According to us, the total areas which had been developed prior to 1924 by the then State of Madras and the areas developed under the terms of the Agreement of 1924 along with the areas developed under ongoing development in the State of Tamil Nadu beyond the entitlement contemplated in the Agreement 1924 upto the year 1990 and considered as reasonable, comes to as follows:

		Figures in Th. Acres	
1)	Areas developed before 1924	-	1519.29
2)	Permitted under the various terms of agreement of 1924.	-	619.50
3)	Developed outside agreement but considered on merit and equity.		
	i) Projects	-	206.50
	ii) Minor irrigation	-	<u>125.48</u>
	Total	-	2470.77
	Say	-	24.71 Lakh Acres

The projectwise details of irrigated areas indicated above are given in the following statement:-

**Details of irrigated area considered under different categories
for the State of Tamil Nadu
(As on June, 1990)**

(Area in thousand acres)

Project 1	1 st Crop 2	2 nd Crop 3	Total 4	Remarks 5
I) Pre-1924:				
1) a) Old Delta (Cauvery & Vennar Sub-basins)	861.67	87.50	949.17	Karaikal area of Pondicherry not included in old delta figures.
b) Lower Coleroon Anicut (LCA)	112.00	7.60	119.60	-
c) Area above upper anicut:				
i) Kattalai System	43.90	10.97	54.87	Second crop Navarai Feb-June replaced by dry irrigated crop.
ii) Kodiveri Anicut	19.70	2.00	21.70	-do-
iii) Kalingarayan Anicut	12.00	10.60	22.60	-do-
iv) Salem Tiruchi Channels	55.70	26.18	81.88	-do-
v) Old Amaravathi Channels	29.00	4.35	33.35	-do-
vi) Noyyil River Channels	14.80	2.30	17.10	-do-
Sub-Total (c)	175.10	56.40	231.50	-
2) Minor Irrigation	219.02	-	219.02	-
Total (I)	1367.79	151.50	1519.29	-
1- Under Clause 10(v):				
a) Cauvery Mettur Project	301.00	20.00	321.00	Breakup of 3.01 lakh acres under GA canal 2.56 + Mettur Canal 0.45, Ref. Clause 10(v). Under Mettur canals, the entire area of 0.45 lakh acres is under first crop with no second crop under this project.
b) Old delta second crop	-	70.00	70.00	
Sub-Total (1)	301.00	90.00	391.00	
2- Under Clause 10(xiv):				
a) Lower Bhavani Project:				Under first turn, paddy crop is allowed in 1.035 lakh acres (50%) area and second turn dry crop in 1.035 lakh acres.
(i) paddy	103.50	-	207.00	
(ii) dry crop	103.50			
b) Amaravathi Reservoir	21.50	-	21.50	-
Sub-Total (2)	228.50	-	228.50	
Total (II)	529.50	90.00	619.50	
Total (I)+(II)	1897.29	241.50	2138.79	
III) Area outside the agreement developed upto June, 1990 (on merit):				
a) 1) Cauvery Delta System	8.00	-	8.00	
2) Lower Coleroon Anicut	20.30	-	20.30	-
3) Salem-Tiruchy Channels	15.60	-	15.60	-
4) Kattalai Scheme	32.40	-	32.40	-
5) New Kattalai High Level Canal	20.60	-	20.60	
6) Pullambadi Canal	22.10	-	22.10	-
7) Thoppiar Res. Scheme	5.30	-	5.30	Started after 1974
8) Kodivery Anicut System	4.80	-	4.80	-
9) Kalingarayan Anicut Scheme	2.00	-	2.00	-
10) Other Minor Scheme (Bhavani Sub-basin)	8.00	-	8.00	-
11) Old Amaravathy Channels	2.20	-	2.20	-
12) Palar Porandalar Res. Project	9.70	-	9.70	Started in 1970, completed in 1978
13) Vattamalaikarai Odai Res. Proj.	2.50	-	2.50	-

1	2	3	4	5
14) Kodaganar Res. Project	9.00	-	9.00	
15) Nanganiyar Res. Project	6.20	-	6.20	
16) Other Minor Schemes (Amaravathy Sub-basin)	4.00	-	4.00	
17) Noyyil Res. Project (Athupalayam Res.)	9.60	-	9.60	-
18) Orathupalayam Res. Project	10.40	-	10.40	-
19) Other Minor Schemes Above & Below Mettur	13.80	-	13.80	
Sub-total III(a)	206.50	-	206.50	
b) Minor Irrigation	125.48	-	125.48	
Total (III)	331.98	-	331.98	
Total (I+II+III)	2229.27	241.50	2470.77	Say 24.71 lakh acres

Chapter 3

**Development of the Irrigated Areas in the State of
Mysore/Karnataka in the Cauvery Basin****Areas developed by Mysore/Karnataka before the year 1924
and their entitlement under the terms of the agreement of 1924**

At the commencement of the century, irrigation in the then State of Mysore was mainly from direct diversion channels from the rivers. Also, the system of tank irrigation was very widespread. As there was no reservoir, the waters of river Cauvery and its tributaries like Kabini, Hemavathy, Harangi, Suvarnavathy, used to pass through the State of Mysore but their ultimate destination was the delta area of the then State of Madras. The CFFC, on the basis of the information submitted on behalf of the then State of Mysore, prepared charts given at pages 146 to 148 of their report (Ref: TNDC Vol. XV, Exh. 841), from which it shall appear that the State of Mysore/Karnataka had shown its area under irrigation in 1924/1928 as 3.149 lakh acres. From the records which have been fully discussed earlier in connection with the Issues under Group I and Group II, it shall appear as to how the State of Mysore wanted to construct a reservoir, later known as Krishnarajasagar Reservoir, since 1910 which materialized after several correspondence and litigation in the year 1924, although first stage of the reservoir with a capacity of 11 TMC was constructed prior to 1924 to facilitate generation of power for Kolar gold mines.

2. It is an admitted position that prior to 1924 Agreement, the irrigation in Mysore was mostly through Anicut channels and minor irrigation. It has been admitted on behalf of the State of Tamil Nadu in their Statement marked 1 filed on 11.8.2004 that Karnataka had developed only 3.149 lakh acres by 1924. The breakup of which is as follows:-

(a)	Anicut Channels	-	1.110 lakh acres
(b)	Minor Irrigation	-	2.039 “ “

	Total	-	3.149 lakh acres

3. Karnataka in their KAR Vol. 67, Exh. 520 at page 1 has indicated the irrigated area under projects at the time of 1924 Agreement as under:-

Project	Area in acres	
	1901	1928
Anicut Channels	1,11,000	1,11,000
Minor Irrigation	1,99,100	2,03,900
Total	3,10,100	3,14,900

Source: TNDC Vol. XV, pages 146-147.

4. During the course of the arguments, our attention was drawn to the correspondence between Madras and Mysore according to which, the State of Mysore had furnished details of area irrigated in or prior to 1910 and area irrigated by 1924, to the then State of Madras vide their letter dated 4th May, 1926 as required under the provisions of Clause 10 (iii) of 1924 agreement. (Ref TNDC Vol. V, Exh. 283, page-189 and Exh. 286, page 196-204) The irrigation in or prior to 1910 is reported as 89,029 acres in Hemavathy, Laxmanthirtha and Cauvery above and below

Krishnarajasagara. In addition, an area of 21,828 acres was under irrigation prior to 1924 on other anicut channels in the following river basins:-

(i)	Yagachi sub-basin	-	3,964 acres
(ii)	Kabini sub-basin	-	12,076 acres
(iii)	Suvarnavathy sub-basin	-	2,201 acres
(iv)	Shimsha sub-basin	-	3,587 acres
	Total		----- 21,828 acres

(Ref: Karnataka Vol.XIV, Exhibit 333, page 27-33)

This makes a total of $89,029 + 21,828 = 1,10,857$ acres, say 1,11,000 (as indicated in the above table area under anicut channels during 1901-1928).

5. Under the 1924 agreement Clause 10(iv), Mysore was permitted to increase the area as existing in 1910 by one-third, on the following individual channels:-

- (i) On Cauvery – above and below Krishnarajasagar
- (ii) Hemavathy
- (iii) Laxmanthirtha

But, as is seen from the instant Exhibit 283 page-189 Column 3 & 4, Mysore increased an area by 8,109 acres leaving a balance of 21,566 acres ($1/3^{\text{rd}}$ of 89,029 acres works out to 29,675 acres as reported in Column 5). The above area of 8,109 acres gets covered under Clause 10(iv) of 1924 Agreement. It is also seen that between 1910 and 1924 Mysore developed new irrigation on right and left bank low level canals

under Krishnarajasagar reservoir by 4,524 acres. This development is related to the provisions under Clause 10(iv) of developing 1,25,000 acres. It seems that this development has taken place under Krishnarajasagar reservoir project which was initially approved for a smaller capacity of 11 TMC in 1911. In addition, an area of 9,428 acres was developed during the same period on the Chamraja anicut under a new right bank canal. (This development of irrigation also gets covered under the provisions of Rule 16 Annexure I which allows 12,500 acres in lieu of submergence under KRS). Thus, by the year 1924, the State of Mysore brought under new irrigation an area of 8,109 acres, 4,524 acres and 9,428 acres, total 22,061 acres (under the provisions of 1924 Agreement) as per details given above.

6. Besides above, an area which was under irrigation in 1924 under Chiklihole anicut in the then Coorg State and Gundal anicut in the then Madras State got transferred to Karnataka at the time of reorganization of the States in the year 1956. The area under irrigation was as under:-

(i)	Chiklihole	1,275 acres
(ii)	Gundal	<u>5,100 acres</u>
	Total	6,375 acres

It is further seen that Shankuthirtha anicut in Yagachi sub-basin, which is said to be ancient anicut, irrigating 750 acres was not reported by Mysore to the CFFC, may be, due to oversight, but the same has been exhibited before this Tribunal as Exhibit E-34. Hence, the same has also been taken into consideration. Thus, the total area which was under irrigation

prior to 1924 (as discussed above) and is to be accounted for in the present State of Karnataka is as under:-

(i)	Existing irrigation on Cauvery, Hemavathy & Laxmanthirtha as in 1910.	89,029 acres
(ii)	New area developed under provisions of 1924 Agreement.	22,061 "
(iii)	Irrigation existing in other sub-basins in 1924	21,828 "
(iv)	Chiklihole & Gundal anicuts (Transferred area)	6,375 "
(v)	Shankuthirtha anicut	<u>750 "</u>
	Total	<u>1,40,043 acres</u>

7. The area under minor irrigation during 1924/1928 in the then State of Mysore (now Karnataka) was 2,03,900 acres. (Ref: TNDC Vol. XV, Exhibit 841, page-148)

8. Thus, the total area under anicuts as well as minor irrigation comes to 3,43,943 acres as shown in the statement below:

Category – I : Statement showing area under irrigation in Mysore/Karnataka prior to 1924

Area in th. ac.

S. No.	Project	Area under irrigation			Reference	Remark
		1 st Crop	2 nd Crop	Total		
(A)	i) Area under Anicut Channels on Cauvery, Hemavathy & Laxmanthirtha river sub-basins: a) Area in 1910 b) Part increase out of 29.675 c) Out of submergence 12.500	89.029 8.109 <u>9.428</u> 106.566	- - - -	89.029 8.109 <u>9.428</u> 106.566	TNDC Vol.V, Exh.283, page 189. Col.2 Col.4 Col.3	Part of 1/3 increase Clause 10(iv). Rule 16 of Annexure-I. 111.090–4.524* (under B) = 106.566
	ii) Area on Anicuts in other Sub-basins.	21.828	-	21.828	KAR Vol. XIV, Sr. No. 333, page 27-33.	See page 2 of the note.
	iii) Area transferred from other States on reorganization of States: a) Gundal Anicut b) Chiklihole Anicut	5.100 <u>1.275</u> 6.375	- - -	5.100 <u>1.275</u> 6.375	KAR Vol. 67, Exh.520, page 9 & E-61 KAR Vol. 67, Exh. 520, page 9 & E-70	Transferred from the then Madras State. Transferred from the then Coorg State.

1	2	3	4	5	6	7
	iv) Shankuthirtha Anicut	0.750	-	0.750	E-34	It was not reported to CFFC. See page 3, Para 1 of the note
	Total-A	135.519	-	135.519		
(B)	Area under KRS Reservoir Stage-1 (Capacity 11 TMC)	4.524	-	4.524*	TNDC Vol.V, Exh. 283, page 189.	Developed prior to 1924 but covered by Clause 10(iv).
(C)	Minor Irrigation	203.900	-	203.900	TNDC Vol. XV, page 148.	
	Total (I)	343.943	-	343.943		

Note: Items A(i), (b), (c) and (B) get covered under Clause 10(iv) of 1924 Agreement (8.109 + 9.428 + 4.524 = 22.061 th. ac.)

Entitlement of Mysore/Karnataka under the terms of 1924 Agreement

9. As has been done in the case of Tamil Nadu, the entitlement of Mysore/Karnataka has to be examined in the light of the terms of the aforesaid Agreement. The State of Mysore was entitled by clause 10(iv) read with the Rules of Regulation of the Krishnarajasagar Reservoir Annexure-I to the agreement, to irrigate an area of 1,25,000 acres from the said Reservoir, as Madras Government was allowed to develop new areas of irrigation under their 'Cauvery Mettur Project' to the limit of 3,01,000 acres under clause 10(v) of the aforesaid Agreement. In view of the specific mention of the aforesaid area of 1,25,000 acres in respect of the State of Mysore to be irrigated from the KRS, there cannot be any dispute about these areas. The State of Mysore was also allowed to extend irrigation over 1,10,000 acres of land from the river Cauvery and its tributaries by Clause 10(iv).

10. It may also be mentioned that Annexure-1 of the Agreement of 1924 provides under Rule 15 that Mysore shall be entitled to extend irrigation without passing compensation water to Madras by improvement

of duty in canals or channels, in existence prior to the year 1910 taking off from the following rivers in Mysore:-

- (i) The Hemavathy
- (ii) The Laxmanthirtha
- (iii) The Cauvery above and below the reservoir; shall be limited to 1/3 of the existing areas prior to the year 1910, the extension under each channel being considered separately.

Rule 16 of Annexure-1 also entitled Mysore to extend irrigation in an area of 12,500 acres, in lieu of submergence of old irrigation coming under Krishnarajasagara reservoir without passing compensation water to Madras, under canals or channels taking off from the Hemavathy, the Laxmanthirtha or the Cauvery, constructed subsequent to the year 1910 and above the Krishnarajasagara.

11. Thus, the new development of irrigation and extension of irrigation under various clauses of the 1924 Agreement listed below will have to be considered as under:-

- (i) Clause 10(iv) of the Agreement
 - (a) 1,25,000 acres under KRS
 - (b) 1,10,000 acres new extensions under clause 10(iv) read with Clause 10(vii).
 - (c) Extension permissible under each of the existing channels to the extent of 1/3 of the area actually irrigated under such channel in or prior to 1910.
 - (d) Rule 16 of Annexure-1 entitles Mysore to extend irrigation in 12,500 acres in lieu of submergence of old irrigation coming under KRS reservoir.

(ii) Clause 10(xii) – Extension of irrigation over and above the limits specified in Clause 10(iv), effected solely by improvement of duty without any increase in the quantity of water used.

(iii) Clause 10(xiii) – Development of new irrigation on tributaries of the Cauvery in Mysore, not included in Schedule-A of the 1892 Agreement (in other-words, provision for extension of irrigation on non-scheduled rivers).

(iv) Clause 10(xiv) – Construction of offset storage reservoirs in addition to storages referred to in Clause 10(vii) of the Agreement, of capacity not exceeding 60% of the new reservoirs in Madras on Bhavani, Amaravathy or Noyyil.

12. In respect of the above provisions for development of irrigation in Karnataka under the 1924 Agreement, the stand taken by Shri Vaidyanathan, learned Senior Counsel for Tamil Nadu was as under:-

(i) That development as envisaged under the various clauses of the Agreement was to be completed before 1974 (50 years period).

(ii) Area, although permitted under any provisions of the 1924 Agreement, but developed after 1974 will receive a lower Priority No.III.

(iii) Other areas developed after 1974 under the ongoing and proposed projects to be covered by Category-V.

Accordingly, in his Statement-1A dated 30.9.2004, the portions relating to Karnataka under Category II, III and V are reproduced below:-

T.N. Statement (1A) dated 30.9.2004 (Area in lakh acres)

II	Area Developed before 1974 under the 1924 Agreement	
a.	KRS (Clause 10(iv) of 1924 Agreement	1.250
b.	Extension upto 1/3 area under each channel (Clause 10(iv) of 1924 Agreement) developed as on 1974.	0.447
c.	Future extension (as per clause 10(iv) of 1924 Agreement) in Cauvery and its tributaries as on 1974.	0.000
d.	Additional area developed due to improvement in duty as on 1974, other than (b) (Clause 10(xii) of 1924 Agreement)	0.670
e.	New projects in the non-scheduled streams as on 1974 (Clause 10(xiii))	0.650
f.	Minor Irrigation – Additional area	0.361
	Total	3.378
III.	Area permitted by the 1924 Agreement but developed after 1974	
	Under future extension as per 1924 Agreement as per Clause 10(iv), limited to the total upto 1.10 lakh acres including the area under the priority II(c)	1.100
	Total	1.100
V.	Other area developed after 1974 under the ongoing and proposed projects	
a.	Developed after 1974 under off-set reservoirs, Kabini & Suvarnavathy (Clause 10(xiv) but limited to the area under the reservoirs of TN developed under Clause 10(xiv))	2.285
	Total	2.285

13. It is also seen that Shri Vaidyanathan has included development under minor irrigation under the provisions of the agreement which is not in order because nowhere the agreement refers to the development of minor irrigation either in Tamil Nadu or Karnataka. As such, the development under minor irrigation is to be dealt with separately outside the provisions of the agreement.

14. At the outset, it may be mentioned that there is no time limit for the envisaged development of irrigation under various clauses of the agreement as assumed by the learned counsel. It may be clarified that once the construction on a project envisaged under any term/clause of the agreement has been started that would be considered as permissible even though its completion date is later than 1974. This point has been elaborated later in the light of US Supreme Court decision as well as the

Helsinki rules. As such, it would be appropriate to examine the entitlement of the State of Karnataka under each clause of the agreement. The same is discussed below:-

The Statement No.1A filed on behalf of the State of Tamil Nadu suggests that Tamil Nadu agrees to the development of 1,25,000 acres under KRS reservoir under Clause (iv). Tamil Nadu also agrees to development of 1/3 area under the same clause as also extension of area in lieu of submergence as permitted under rules 15 & 16 of Annexure-1.

15. As regards development due to improvement of duty under Clause 10(xii), Tamil Nadu seems to have only considered extension under this clause in respect of KRS reservoir, whereas, even Hemavathy reservoir would get benefit of extension in irrigation by way of improvement of duty. As regards new projects on non-scheduled streams which will get covered under Clause 10(xiii), Tamil Nadu has admitted the area developed as on 1974 only. Further, the statement indicates that since Mysore/Karnataka could not develop before 1974 the new irrigation over 1,10,000 acres permitted to them under Clause 10(iv), it shall be deemed that the said area when developed should receive a lower Priority No.III. In this respect, it would be appropriate to say that the State of Mysore/Karnataka had started construction of Hemavathy project from the year 1968 that is well before the expiry of 50 years period and this was a firm action for utilization of Cauvery waters for extension of irrigation as provided under Clause 10(iv) read with Clause 10(vii). Simultaneously, the matter regarding framing of the rules of regulation for

Hemavathy reservoir as per the provisions of 1924 agreement was taken up with the then CW&PC and finalized on 12th October, 1970 (KR Volume II, Exhibit 139, page 459-461) saying “It was agreed by the engineers of the three States that the rules of regulation and the working tables prepared and circulated by CW&PC were generally within the terms of 1924 agreement”. The State of Karnataka have confirmed before this Tribunal that this project was taken up under the provisions of the aforesaid Clause (Ref: Karnataka Note dated 26.6.2002, page 2, item 13 and Karnataka Exh. E-65). This position has also been affirmed by the State of Tamil Nadu (on 17.2.1970) vide TNDC Vol. VIII, Exh.475, page 6, paragraph 2.1 reproduced below:-

“The Hemavathy Project:

2.1 The Govt. of Mysore have taken up for execution under Clause 10(iv) of the 1924 Agreement, a reservoir project on the Hemavathy, a tributary of the Cauvery mentioned in Schedule ‘A’ of the 1892 Agreement.....”

16. In the case of Karnataka, extension of irrigation in an area of 1,10,000 acres was permitted to them vide Clause 10(iv) of 1924 Agreement. However, for reasons stated by the State of Karnataka, they could not develop irrigation in 1,10,000 acres till 1974 (expiry of 50 years of 1924 Agreement); but as Karnataka had begun construction of Hemavathy reservoir project in the year 1968, it would qualify under Clause 10(iv) of 1924 Agreement. Once the work has started on any scheme for development of irrigation as contemplated under the terms of the agreement, a claim shall receive priority from the date of

commencement of work. In this connection, a reference to U.S. Supreme Court's decision in the case of Wyoming v. Colorado [259 US P.419 (1922)] would be pertinent. The U.S. Supreme Court in the aforesaid case has held that unless action on the proposed appropriation has not reached a point where there was a fixed and definite purpose to take it up and carry it through the proposed plan does not take priority..... .

Accordingly, the Supreme Court held:

“Actual work in making the tunnel diversion was begun, as before shown, about the last of October, 1909. Thereafter, it was prosecuted with much diligence, and in 1911, when this suit was brought, it had been carried so nearly to a state of completion that the assumption reasonably may be indulged that, but for the suit, the appropriation soon would have been perfected. We conclude that the appropriation should be accorded a priority by relation as of the latter part of October, 1909, when the work was begun.”

(Ref: TN Compilation No.12, page 57, right column).

17. In this connection, reference to Helsinki rules Article VIII - 2(a) may also be helpful:

“A use that is in fact operational is deemed to have been an existing use from the time of the initiation of construction directly related to the use or, where such construction is not required, the undertaking of comparable acts of actual implementation.”

Keeping in view the opinions expressed by the Supreme Court of United States of America and the Helsinki rules referred to above, the stand of Tamil Nadu does not appear to be tenable. All the projects on which construction was started prior to 1974, would be covered under Category-

It irrespective of the date of completion, provided those projects qualify under any of the above clauses of the Agreement of 1924.

18. The stand of the State of Karnataka is that the slow extension of irrigation in Karnataka has to be attributed to a great extent, because of the various clauses of the Agreement of 1924 which provide that Mysore/Karnataka should ensure specified limit flows at the Upper Anicut and operate Krishnarajasagara reservoir as per the impounding formula given in Annexure I of the Agreement of the year 1924 referred to above. The new reservoirs which the then State of Mysore was permitted to construct under Clause 10(vii) had a condition that they shall be operated in such a manner which shall not affect the limit flows which were due to the then State of Madras at the Upper Anicut in terms of the Rules of Regulation framed for Krishnarajasagara reservoir. It shall be proper to reproduce Clause 10(vii):-

“10(vii) The Mysore Government on their part agree that extensions of irrigation in Mysore as specified in clause (iv) above shall be carried out only by means of reservoirs constructed on the Cauvery and its tributaries mentioned in Schedule A of the 1892 agreement. Such reservoirs may be of an effective capacity of 45,000 million cubic feet in the aggregate, and the impounding therein shall be so regulated as not to make any material diminution in supplies connoted by the gauges accepted in the Rules of Regulation for the Krishnarajasagara forming Annexure I to this agreement, it being understood that the rules for working such reservoirs shall be so framed as to reduce to within 5 percent any loss during any impounding period, by the adoption of suitable proportion factors,

impounding formula or such other means as may be settled at the time.”

[Emphasis supplied]

Clause 10(vii) specifically puts three conditions:

(i) Mysore Government could extend irrigation in areas specified in Clause 10(iv) by means of reservoirs constructed on the Cauvery and its tributaries. (ii) Such reservoirs shall be of an effective capacity of 45,000 million cubic feet in the aggregate. (iii) The impounding in such reservoirs constructed on the tributaries of the river Cauvery in Mysore shall be ‘so regulated as not to make any material diminution in supplies connoted by the gauges accepted in the Rules of Regulation for the Krishnarajasagara forming Annexure I to this agreement.’

The condition (iii) above enjoins to regulate impounding in reservoirs constructed on the tributaries in such a manner so as not to make any material diminution in the supplies connoted by the gauges specified in Rule 7 of the Rules of Regulation of the Agreement of 1924 in respect of KRS. Clause 10(vii) stipulates the manner in which impounding in new reservoirs was to be done.

19. During the Mysore-Madras Cauvery Arbitration, 1929 under the Chairmanship of Justice A. Page. The State of Madras in their counter statement, [TNDC Volume VI, page 19] in paragraph 24 said *inter alia* :

“..... In entering into the agreement of 1924 and in launching upon the construction of the Krishnarajasagara, Mysore took the risk of their not being able to cultivate the full extent of land mentioned in this paragraph. Far from there being any kind of obligation on the part of Madras to secure to Mysore the right to cultivate any definite extent, the rights of Mysore under the

agreement are expressly subject to minimum flow being secured to Madras. In the case of Madras its extensive and existing rights had to be protected, while in the case of Mysore, its projected scheme was only for prospective irrigation.” [Emphasis supplied]

Mr Alladi Krishnaswami Ayyar during his argument on behalf of the State of Madras took the stand before the Arbitrator:-

“..... Madras also made it quite clear to Mysore in the course of the correspondence that they must take the chance of a failure of the Krishnarajasagara Scheme. In terms Mr Howley said that he was not concerned with the evolution of a successful financial scheme in regard to the Krishnarajasagara. The paramount and main consideration ought to be, it was urged on the part of Madras, the protection of the existing rights of Madras, which go back to historic times”.

[Emphasis supplied]

20. The stand of the State of Karnataka was that it could not develop areas because of limit flows prescribed under Rule 7 of the Rules of Regulation (Annexure I). They referred to Arbitration matter and pointed out that before the Arbitrator Mr. Alladi Krishnaswami Ayyar had taken the stand in the written statement as well as during the argument that it had been made quite clear to Mysore in the course of the correspondence that they must take the chance of a failure of the Krishnarajasagara Scheme.

21. The development of area till 1974 by Karnataka under the terms of Agreement of 1924 is given in the following table:-

Development achieved by Karnataka under the 1924 Agreement till 1974

Area in acres

S. No.	Clause	Area	Entitled	Developed till 1974	Balance to be developed
1.	10(iv)	(i) Extension under KRS	1,25,000	1,25,000	-
		(ii) New extension read with 10(vii) on tributaries of Cauvery.	1,10,000	-	1,10,000
		(iii) Extension of existing channel to 1/3 extent.	29,675	29,675	-
		(iv) Rule 16 of Annexure-I	12,500	12,500	-
		Sub-total	2,71,175	1,67,175	1,10,000
2.	10(xii)	Extension of area by improvement of duty:			
		(i) Under K.R.S.	70,972	70,972	-
		(ii) On Hemavathy	2,01,000	-	2,01,000
		Sub-total	2,71,972	70,972	2,01,000
3.	10(xiii)	Eleven schemes on non-scheduled rivers.	69,000	69,000	-
		Sub-total	69,000	69,000	-
4.	10(xiv)	60% off-set reservoir – extension on:			
		(i) Kabini river	1,13,000	7,890	1,05,110
		(ii) Suvarnavathy river	14,493	-	14,493
		Sub-total	1,27,493	7,890	1,19,603
		Grand Total	7,45,630	2,15,000	5,20,603

Note:1) Hemavathy project commenced in 1968 and commissioned in 1979-80.

2) Kabini project commenced in 1959 and commissioned in 1978-79.

3) Suvarnavathy project commenced in 1965 and commissioned in 1984.

22. The State of Karnataka has furnished details of the reservoir projects vide their KAR Vol. No.67, Exh. 520 dated 26.6.2002, page 2-7.

These are extracted in the following table:-

Details of Area claimed by Karnataka under the provisions of 1924 Agreement

S. No.	Name of Project	Year of Commencement	Planned Irrigated area (Acres)		Under what clause of agreement
			Net	Gross	
1.	2.	3.	4.	5.	6.
A- Commenced before 1974:					
1.	Anicut channels	Old channels	29,675	29,675	Rule 15 Annexure-I
2.	-do-	-do-	12,500	12,500	Rule 16 Annexure-I
3.	Krishnarajasagar	1911	1,25,000	1,25,000	10(i) & 10(iv)
4.	Marconahalli	1938	15,000	15,000	10(xiii)
5.	Byramanagla	1939	4000	8000	10(xiii)
6.	Kanva	1940	6,360	11,050	10(xiii)
7.	Nugu	1946	18,110	18,110	-do-
8.	Hebballa	1958	3,050	3,050	-do-
9.	Chikkahole	1958	4,080	4,080	-do-
10.	Kabini	1959	2,17,200	4,27,400	10(xiv)
11.	Mangla	1961	4,040	6,140	10(xiii)
12.	Harangi	1964	1,34,890	1,74,020	-do-
13.	Suvarnavathy	1965	16,694	16,694	10(xiv)
14.	Hemavathy	1968	7,00,760	7,00,760	10(iv)& 10(vii)
15.	Manchanabele	1970	9,500	9,500	10(xiii)
16.	Taraka	1970	17,400	32,400	-do-
	Sub total 'A'		13,18,259	15,93,379	
B- Commenced after 1974:					
17.	Nalluramaekere	1975	3200	3200	10(xiii)
18.	Arkavathy	1975	15,400	22,900	-do-
19.	Votehole	1976	18,500	18,500	-do-
20.	Iggalur	1979	10,000	13,650	-do-
21.	Yagachi	1984	53,000	53,000	-do-
	Sub total 'B'		1,00,100	1,11,250	
	Total 'A'+ 'B'		14,18,359	17,04,629	

Source: KAR Vol. 67, Exh. 520, pages 2-7.

23. It would be seen from the above table that there are two components: (A) schemes commenced before 1974 under which irrigated area planned is 13,18,259 acres and the other (B) is for the projects commenced after 1974. The irrigated area planned under this category is 1,00,100 acres. Thus, the total net irrigated area planned and claimed by Karnataka is of the order of 14.184 lakh acres. The State has also claimed second crop area under these projects giving a gross planned

area for irrigation as 17.046 lakh acres. Thus, an area of 17.046 – 14.184 = 2.862 lakh acres has been proposed as second crop area. The above areas have been claimed by Karnataka under Clauses 10(iv), 10(vii), 10(xiii) and 10(xiv). However, it is seen that under the KRS project (item 3), the gross planned area as indicated by Karnataka in the above referred exhibit is shown as 1,25,000 acres but actually by the year 1990, they had extended irrigation under KRS reservoir project to 1.96 lakh acres which they have reported in the above exhibit under item 10, Col.9. The extended area beyond 1,25,000 acres is by way of improvement of duty which is of the order of 0.709 lakh acres. However, the State of Tamil Nadu has allowed increase in this provision of extension by way of improvement of duty under Clause 10(xii) to the extent of 67,000 acres as given in their Statement 1A, Category II(d); but the State of Karnataka has erroneously claimed the same under Clause 10(iv). Except this extension, the claim of Karnataka for the second crop in all other projects does not qualify under the provisions of the agreement.

24. Similarly, under Hemavathy project (item 14), Karnataka has claimed an area of 7.007 lakh acres against 1,10,000 acres which is their entitlement under Clause 10(iv), read with Clause 10(vii). As regards Kabini and Suvarnavathy projects which have been constructed under Clause 10(xiv) as offset reservoir projects, the claim of Karnataka needs to be restricted to their original project proposal as discussed in the succeeding paragraphs.

25. The State of Karnataka have claimed several projects under Clause 10(xiii), major under them being Harangi project which has been built on non-scheduled river according to the State of Karnataka. Since Harangi is a tributary which was in the Coorg territory and was contributing the bulk of the flows to the main Cauvery under the terms of agreement, this cannot be treated as a non-scheduled river. However, such claims would need consideration based on needs of party States as also consideration of equity but outside the entitlement under the agreement. Further, it is seen that several other projects have been claimed by Karnataka under clause 10(xiii) clubbing therein the projects started before 1974 as well as after 1974. From amongst these projects, only those on which the work was commenced before 1974 would qualify under Clause 10(xiii). The remaining projects will again need consideration depending on the availability of water and equity in the development of irrigation outside the agreement.

26. In the light of the above observations, the entitlement of the then State of Mysore (now Karnataka) under each clause of the agreement have to be examined.

1. Extension under Clause 10(iv):

Under this Clause, four distinct provisions for development/extension of irrigation have been made as under:-

(a) Krishnarajasagara Reservoir:

There is a provision for development of new irrigation in an area of 1,25,000 acres under the Krishnarajasagara project.

(Comprising 85,000 acres of single crop and 40,000 acres as perennial crop)

(Ref: E-104(C), page 51)

(b) Future extension of irrigation in Mysore under the Cauvery and its tributaries to an extent of 1,10,000 acres is also permitted under this clause. The effective capacity of reservoirs was specified as 45 TMC under Clause 10(vii) of the 1924 Agreement.

The State of Karnataka has intimated that Hemavathy project has been undertaken under this clause viz.10(iv). As per project report, the Project was originally designed and approved in February 1968(Ref: KAR Vol. VIII, Exh. 301, page 10, para 3.0) to store 21.7 TMC (effective capacity) of water and to irrigate 1,00,000 acres of land. The year of commencement of construction work is reported as 1968. (Ref : E-65, Page1)

The Central Water Commission had also prepared Rules of regulation for Hemavathy reservoir & discussed with both State's representatives in the July & October 1970.

(Ref: TNDC Vol. VIII, Exh.555, page 185 and KAR Vol. II, Exh. 139, page 461 -Conclusion)

Later on, in December, 1970, the scope of the project was revised to irrigate 6,55,000 acres with a storage capacity of the reservoir as 34 TMC. This revised project was sent to Central Water Commission on 4th October, 1973 for clearance. (Ref: Kar Vol VIII, Exh.301, page-12).

Since, under this clause i.e. 10(iv), only 1,10,000 acres qualify for development of irrigation, accordingly, 13,000 acres of Khariff paddy and remaining 97,000 acres of Khariff semi-dry crops are being considered (as provided in the revised project report). (Herein, only the provisions for area are being discussed whereas reasonable requirement of water for the same would be discussed in later part of this Volume)

(c) In addition, the extension permissible under each of the existing channels to the extent of $1/3^{\text{rd}}$ of the area actually irrigated under such channels in/or prior to 1910 is also provided for.

Karnataka in their letter of 1926, have clarified that the area under irrigation in 1910 was 89,029 acres; thus $1/3^{\text{rd}}$ of this area which works out to be 29,675 acres was their entitlement under this provision. (Ref: TNDC Vol. V, Exh. 283, page 189)

(d) Under Rule 16 (Annexure-I):

In lieu of submergence under KRS - 12,500 acres

Thus, under Clause 10(iv), Karnataka was entitled to develop new irrigation in 2,77,175 acres (1,25,000 + 1,10,000 + 29,675 + 12,500).

It may however be mentioned that the State of Karnataka had developed an aggregate area of 22061 acres during the period 1911 to 1924, later on covered in Clause 10(iv) of 1924 Agreement as indicated above. This development was carried out

after Karnataka was permitted to construct Krishnarajasagara reservoir of lower capacity of 11 TMC in the year 1911.

2) Under Clause 10(xii):

Under this clause, the State of Madras and Mysore had further agreed that the limits for extension of irrigation specified in Clauses 10(iv) and 10(v) shall not preclude extensions of irrigation effected solely by improvement of duty, without any increase in the quantity of water use. Accordingly, Karnataka could—by economizing the use of water in Krishnarajasagara and Hemavathy Projects—increase extent of area under irrigation by improvement of duty. In view of this provision, it seems feasible for Karnataka to extend a total of about 70,972 acres under KRS reservoir beyond 1,25,000 acres (the proposed break-up-being – khariff paddy about 30,972 acres, rabi and khariff semi-dry crops 20,000 acres each).

Under the Hemavathy project, similarly it becomes feasible for Karnataka to extend rabi semi-dry in about 1,00,000 acres and khariff semi-dry in about 1,01,000 acres (within overall water use of even about 21.7 TMC as originally planned).

In this connection, a reference to comments of Mysore in an inter-State meeting held on 12.10.1970 in Central Water & Power Commission on Hemavathy and Kabini Projects would be relevant, which are quoted below:

“At the outset Chairman made it clear that according to instructions given at the inter-State Chief Minister’s

Conference in the morning, the scope of the present meeting would be to discuss Hemavathy, Kabini and Kerala projects in Cauvery basin with a view to put up agreed proposals within the ambit of 1924 Agreement regarding the shape and feature of these projects.....”

“Comments of Mysore:

(1).....Mysore has done preliminary studies which show that with 75% dependability it would be possible to utilize 35.5 TMC of water by increasing the live storage capacity of the reservoir (Hemavathy) to 40 TMC without affecting the limit flows. They were of the opinion that there was nothing sacrosanct about the new area which could be provided with irrigation with the same quantity of water: better utilization can be had by providing water to larger area and by changing crop pattern; by adopting improved methods of agriculture.....”

“Conclusions:- It was agreed by the engineers of the three States that the Rules of regulation and the working tables prepared and circulated by CW&PC were generally within the terms of 1924 Agreement.....”

(Ref: KAR Vol.II pages 459 to 461, Exhibit-139)

3) Under Clause 10(xiii):

The State of Karnataka has submitted before this Tribunal that they have constructed several reservoir projects on non-scheduled rivers under Clause 10(xiii) of the 1924 Agreement covering a total area of 3,55,526 acres (Ref: KAR Vol. 65, Exh. 518, page 100). However, according to us, only the following

eleven schemes covering an area of 69,330 acres qualify under this clause:-

	Area in Th. Ac.
1) Marconahalli	15.000
2) Byramangala	4.000
3) Kanva	6.365
4) Nugu	18.110
5) Chikkahole	4.076
6) Hebballa	3.050
7) Mangala	2.320
8) Manchanbele	9.500
9) Gundal	2.000
10) Shimsha Channel	3.599
11) Suvarnamukhi Channel	<u>1.310</u>
Total	<u>69.330</u>

The remaining schemes are either those which are not on non-scheduled rivers or which have been constructed after 1974, though on non-scheduled rivers; these schemes could be considered on merit and will be discussed separately.

4) Under Clause 10(xiv):

The State of Karnataka has submitted before this Tribunal that they have constructed Kabini and Suvarnavathy Projects as off-set reservoirs under the above clause.

(Ref: KAR Vol.67, Exh.520, pages 2 & 3)

The Kabini reservoir project was undertaken in the year 1959 and was partly commissioned in 1974 after construction of the dam was completed. The project proposed to cover an ayacut of 1,13,000 acres but the State has proposed annual intensity of 192.9% (khariff season paddy 53,000 acres and khariff semi-dry

60,000 acres = 1,13,000 acres i.e. 100% and rabi season paddy 3,000 acres and rabi semi-dry 1,02,000 acres = 1,05,000 acres, overall intensity 192.9%).

Keeping in view the constraint of water availability in the Cauvery basin, we suggest restriction of the annual intensity of irrigation to 100% i.e. an area of 1,13,000 acres. (Ref: E-68, pages 21 and 26)

27. As regards Suvarnavathy project, it has been planned for covering 16,694 acres at 100% intensity of irrigation. The break-up of the area is as under:-

- | | | |
|------|---|----------------|
| i) | New irrigation i.e. Khariff semi-dry- | 7,000 acres |
| ii) | Stabilisation of old irrigation under - | <u>7,493</u> " |
| | khariff paddy | 14,493 acres |
| iii) | Area under old Suvarnavathy Anicut- | 2,201 acres |
- (Already included in the Statement of areas existing prior to 1924.

Therefore, not to be accounted for here). Therefore, the Suvarnavathy project would cover 14,493 acres. (Ref: E-60, pages 1 & 6 and KAR Vol. 67, Exh. 520, page 9). Thus, the Kabini and Suvarnavathy projects would cover 1,27,493 acres (1,13,000+14,493). From the above details, it is seen that the State of Karnataka could justifiably extend irrigation in 7,23,909 acres of land under the provisions and entitlement of 1924 Agreement.

A statement giving details of areas under each clause is given below:-

Category – II : Details of areas permissible for development of irrigation under 1924 Agreement in Karnataka

Name of Project	Area to be irrigated (in th.ac.)					Total	Area already accounted for Under pre-1924 Statement
	Khariff Paddy	Perennial	Khariff semi-dry	Rabi-semi dry			
i) Under Clause 10(iv):							
a) K.R.S.	85.000	40.000	-	-		125.000	(-) 4.524
b) New Irrigation (Hemavathy)	13.000	-	97.000	-		110.000	
c) Extension of existing irrigation on anicut channels by 1/3:							
i) Cauvery above KRS	8.240	--	-	-	-	8.240	0.254
ii) Cauvery below KRS	14.243	--	-	-	-	14.243	1.601
iii) Hemavathy	4.919	-	-	-	-	4.919	6.036
iv) Laxmanthirtha	<u>2.273</u>	-	-	-	-	<u>2.273</u>	<u>0.218</u>
	29.675					29.675	(-) 8.109
d) Under rule 16(Ann.I)							
In lieu of submergence under KRS.	12.500		-	-	-	12.500	(-) 9.428
Sub-Total (i)	140.175	40.000	97.000	-	-	277.175	(-)22.061
ii) Under Clause 10(xii):							
a) KRS	30.972	-	20.000	20.000		70.972	-
b) Hemavathy	-	-	101.000	100.000		201.000	-
Sub-Total (ii)	30.972	-	121.000	120.000		271.972	-
iii) Under Clause 10(xiii):							
1)Marconahalli	15.000	-	-	-		15.000	-
2)Byramangala	-	-	4.000	-		4.000	-
3)Kanva	-	-	6.365	-		6.365	-
4)Nugu	18.110	-	-	-		18.110	-
5)Chikkahole	4.076	-	-	-		4.076	-
6)Hebballa	3.050	-	-	-		3.050	-
7)Mangala	-	-	2.320	-		2.320	-
8)Manchenbele	-	-	9.500	-		9.500	-
9)Gundal	-	-	7.100	-		7.100	(-) 5.100
10)Shimsha Channel	7.186	-	-	-		7.186	(-) 3.587
11)Suvernamukhi Channel	1.310	-	-	-		1.310	-
Sub-Total (iii)	48.732	-	29.285	-		78.017	(-) 8.687
iv) Under Clause 10(xiv):							
1) Kabini	33.000	-	40.000	40.000		113.000	-
2) Suvernavathy	<u>9.694</u>	-	<u>7.000</u>	-		<u>16.694</u>	(-) 2.201
Sub-Total (iv)	42.694	-	47.000	40.000		129.694	(-) 2.201
Total (II) (i+ii+iii+iv)	262.573	40.000	292.285	160.000		756.858	(-) 32.949
						Balance 756.858 – 32.949 =	723.909

[Grand Total Category I + II 343.943 + 723.909=1067.852]

The total area developed prior to the 1924 Agreement was 3.439 lakh acres. The area entitlement of State of Mysore under the terms of

the Agreement of 1924 comes as discussed above to 7.239 lakh acres. The total being 10.678 lakh acres.

28. Having examined the areas actually under irrigation prior to 1924 and the entitlement of Karnataka under the agreement of 1924, it appears that like Tamil Nadu the State of Karnataka has further extended irrigation by way of –

- i) Minor irrigation;
- ii) Extension of new areas under the existing projects.
- iii) By way of taking up of new projects after 1974.

The State of Karnataka had submitted the details of their planned areas under all categories in their Statement No. K-V till June, 1990 before this Tribunal while arguing on the CMP in respect of Interim Relief sought by the State of Tamil Nadu.

- iv) In addition, State of Karnataka has proposed certain new schemes.

All the above contemplated development would need to be examined on the basis of just and reasonable allocation of Cauvery water based on the socio-economic need of the State.

Areas developed/under ongoing development in the State of Karnataka beyond the entitlement contemplated in the 1924 Agreement upto the year 1990

29. Earlier the areas under irrigation existing prior to 1924 and those areas which Karnataka was permitted to develop under various provisions of the 1924 agreement have been examined. The broad break-up of the same is given in the following table:-

Area in 000' acres						
Sl. No.	Irrigation development	Under anicut channels	Under major & medium Irrigation Projects	Minor irrigation	Total	Remarks
1	2	3	4	5	6	7
1.	Areas existing prior to 1924 Agreement	135.519	4.524	203.900	343.943	The details of these figures are already discussed under the existing irrigation prior to 1924.
2.	Areas permitted to be developed under 1924 Agreement	29.547	694.362	-	723.909	1924 Agreement did not cover extension under minor irrigation.
	Total	165.066	698.886	203.900	1,067.852	

Thus, in Karnataka, the area existing prior to 1924 and their entitlement under different provisions of 1924 agreement aggregates to 343.943 + 723.909= 1,067.852 th. acres, say 10.68 lakh acres.

30. The Tribunal was constituted by a notification dated 2.6.1990 referred to earlier by the Central Government in exercise of its power under Section 4 of the Inter-State Water Disputes Act. After constitution of the Tribunal the State of Tamil Nadu filed CMP Nos. 4 and 9 of 1990 and 6 of 1991 before this Tribunal for grant of interim relief by way of direction to the State of Karnataka to release the waters of river Cauvery according to the claim made on behalf of the State of Tamil Nadu. The details of the said CMPs have already been discussed earlier in different volumes.

31. The State of Karnataka while opposing any such direction, filed a statement called K-V stating as under:-

“(b) The statement showing the extent of irrigation and utilisation in Karnataka in the Cauvery basin for the year 1971 and under the existing and committed projects after 1974 – upto

June 1990 is annexed hereto and marked as Annexure K-V.....” (Ref: Supplementary Statement of objections by Karnataka dated 22.5.91, page 34, paragraph 19(b) to Tamil Nadu CMP No.6 of 1991)

This statement was later marked as Exh. No.1434 (TN Vol. 36). The State of Karnataka has indicated therein the total area claimed by it including ongoing irrigation schemes as in June, 1990 as 20.98 lakh acres. It will be proper to reproduce the said statement because it gives the projectwise details of existing areas which had been developed before 1972 as well as the areas which were being developed after 1972/1974:-

T.N. EXHIBIT VOL.36 SL.NO.1434

K-V

“ Statement showing outlay, utilization and the extent of irrigated area in Cauvery basin in Karnataka for the years 1972 & 1990 under existing and committed projects

Sl. No.	Name of the Project	River	Year of Starting	Estimated Cost Rs in Lakh	Outlay to end of March 1990 (in Lakh)	Year of completion of the project or starting of irrigation	Utilization (TMC)/irrigated area(Lakh acres)						
							Planned		Existing as on 1972		Existing as on June 1990		
							Utilisation	Irrigated area	Utilisation	Irrigated area	Utilisation	Irrigation	Irrigated area
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Anicut Channels	Cauvery Lakshmanathirtha Hemavathi and Kabini	Old	NA	-	Old	57.7	1.90	49.20	1.91	68.97	1.9	1.900
2.	Krishnarajasagar	Cauvery	1924	250	-	1931	61.2	1.96	46.80	1.92	70.70	1.95	1.950
3.	Kanva	Kanva	1940	35	-	1946	1.2	0.05	1.10	0.05	0.86	0.05	0.050
4.	Byramangala	Vrishabhavathy	1939	25	-	1945	1.0	0.04	0.92	0.04	1.00	1.04	0.040
5.	Marconahalli	Shimsha	1939	35	-	1941	4.0	0.15	3.60	0.15	0.86	0.15	0.150
6.	Hebballa	Hebballa	1958	54	-	1972	0.4	0.03	0.36	0.03	1.00	0.03	0.030
7.	Nugu	Nugu	1946	311	-	1949	7.7	0.26	7.00	0.26	5.25	0.26	0.260
8.	Chickhole (including diversion)	Chickhole	1958	424	424	1969	0.7	0.04	0.70	0.05	0.64	0.04	0.040
9.	Mangala	Tributary to Shimsha	1961	60	-	1970	0.6	0.02	0.56	0.02	0.40	0.02	0.020
10.	Suvernnavathy	Suvernnavathy	1965	381	381	1984	3.6	0.07	-	-	0.37	0.07	0.070
11.	Gundal	Gundal Stream	1970	452	452	1980	1.4	0.10	-	-	0.35	0.10	0.100
12.	Nalluramanikere	Gundlu, a tributary to Kabini	1975	517	517	1987	0.3	0.03	-	-	0.20	0.03	0.030
13	Kamasamudra LIS	Hemavathy	1985	630	250	-	0.8	0.08	-	-	-	-	-
14	Huchanakoppalu LIS	Hemavathy	1986	690	50	-	0.6	0.06	-	-	-	-	-

1	2	3	4	5	6	7	8	9	10	11	12	13	14
15	Hemavathy	Hemavathy	1968	58,800	33,614	1979-80	54.7	7.00	-	-	30.70	1.53	1.530
16	Votehole	Tributary to Hemavathy	1977	2,307	1,824	1981-82	2.4	0.19	-	-	0.43	0.11	0.110
17.	Yagachi	On Yagachi, a tributary to Hemavathy	1983	3,538	669	-	5.7	0.53	-	-	-	-	-
18.	Kabini	Kabini	1959	47,100	14,257	1978-79	65.0	2.17	-	-	29.30	0.97	0.970
19.	Harangi	Harangi	1964	15,600	11,033	1979-80	18.0	1.35	-	-	15.00	0.85	0.850
20.	Chiklihole	Chiklihole	1978	1,067	608	1985-86	0.8	0.04	-	-	0.32	0.002	0.002
21.	Manchanabele	Arkavathy	1970	2,767	1,836	1985-86	0.8	0.09	-	-	0.40	0.02	0.020
22.	Taraka	Taraka tributary to Kabini	1970	1,300	1,289	1978-79	3.2	0.17	-	-	0.45	0.17	0.170
23.	Arkavathy	Arkavathy	1975	3,300	556	1985-86	3.1	0.21	-	-	-	-	-
24.	Iggalur	Shimsha	1979	1,300	364	1984-85	1.8	0.10	-	-	0.60	0.03	0.030
25.	D. Devraj Urs (Varuna) canal	Cauvery	1979	7,000	2,287	1984-85	10.5	0.80	-	-	0.02	0.009	0.009
26	Uduthorehalla	Uduthorehalla	1978	3,342	147	-	1.2	0.16	-	-	-	-	-
27.	Modernisation of K.R.S	Cauvery	1979	6,700	1,911	-	-	0.05	-	-	-	-	-
28.	Minor irrigation	Entire Cauvery basin	-	-	-	-	71.3	3.33	54.70	2.40	66.50	2.93	2.930
29.	Water supply	-	-	-	-	-	28.0	-	5.00	-	18.00	-	-
		Total		155441	72,469		407.7	20.98	169.94	6.83	312.32	11.20	11.200

The aforesaid statement also mentions the year of commencement of the different reservoir projects, to provide water to new areas which the State of Karnataka had planned to develop; several of them had already been partially completed by June 1990 and irrigation started.

32. Court or Tribunal while determining the date for consideration of the just and equitable share has to fix a cut off date, i.e., the date on which the claims of each riparian State are to be considered in respect of water requirement. So far as the present dispute is concerned, we think it appropriate, the year 1990 be taken as relevant date for considering equities between party States, when the matter was referred to the Tribunal. It is because of the fact that the Tribunal can not ignore the development which has taken place during this period. The stand of Tamil Nadu is, so far the present dispute is concerned, the agreement of the year 1924 was to be reviewed after lapse of 50 years, i.e., in the year 1974. The stand of Karnataka is that it expired in 1974. However, it has

been held earlier while dealing with Group-I issues that after expiry of the period of 50 years since 1924, it was to be reviewed and re-examined. The State of Tamil Nadu approached the Central Government for reference to a Tribunal in the year 1986, but reference was made by the Central Government on 2.6.1990. Therefore, it will be just and proper to consider the respective claims of different riparian States before us with reference to June 1990.

33. A plea had been taken on behalf of Tamil Nadu at some stage that the relevant date for apportionment should be the year 1974 when the period of 50 years expired. From a bare reference to the interim order passed by this Tribunal on 25.6.1991 directing the State of Karnataka to ensure that 205 TMC of water is available in the Mettur reservoir of Tamil Nadu in a year from June to May, it shall appear that an order of injunction was also passed against the State of Karnataka saying:-

“We further direct that the State of Karnataka shall not increase its area under irrigation by the waters of river Cauvery beyond existing 11.2 lakh acres, as mentioned in their Annexure K-V, column 13, at page 103 to the Supplementary Statement of Objections dated 22nd May, 1991 to the amended CMP No.4/90.”

34. Statement K-V was filed on behalf of the State of Karnataka during hearing of the application for interim relief filed on behalf of the Tamil Nadu. K-V has already been reproduced earlier. From that Statement, it shall appear the heading is ‘Statement showing Outlay, Utilisation and the extent of irrigated area in Cauvery Basin in Karnataka for the years 1972 & 1990 under existing and committed projects’. In column 3, the

details of all the projects which were completed as well as on-going had been given with reference to the years of commencement of such projects. In column 8 and 9 the planned utilization and irrigated area with reference to different projects were mentioned. The planned irrigated area was shown at the bottom to be 20.98 lakhs. However, in column 13, irrigated area as existing in June 1990 was shown as 11.20 lakh acres. The Tribunal in its interim order passed on 25.6.1991 restrained Karnataka during the pendency of this proceeding from extending the irrigated area beyond 11.2 lakh acres which was the then shown existing irrigated area. The Supreme Court while giving its opinion on the reference under Article 143 of the Constitution of India [1993 Supp. (1) SCC 96 (II)] has answered the different questions referred and in paragraph 97 it took note of the order of restrain passed by the Tribunal:-

“In addition, it directs the State of Karnataka not to increase its area under irrigation by the waters of the river Cauvery beyond the existing 11.2 lakh acres. It further declares that it will remain operative till the final adjudication of the dispute.”

35. This Tribunal at the stage of passing the interim order, as well as the Supreme Court took note of the fact that the irrigated area as shown on June 1990 was 11.2 lakh acres. It does not appear that either before this Tribunal; or before the Supreme Court any attempt has been made on behalf of the State of Tamil Nadu that the areas which could be irrigated during the pendency of the proceedings should be the areas which had been developed by Karnataka upto the year 1974 only. Upto 1974 when

the agreement was in force, the total area developed by Mysore/Karnataka was only 6.824 lakhs acres. (Ref. P.159, TNDC Vol. XV). This Tribunal has already taken note of the described irrigation by Karnataka as 11.2 lakh acres during the pendency of the proceedings before the Tribunal. However, it deserves mention here that this Tribunal had, at the time of passing its interim order in June, 1991, had not recognized that irrigation area in Karnataka in June, 1990, as mentioned in its Statement K-V was actually 11.2 lakh acres. At that point of time, the pleadings were not complete, evidence of the parties was still to be recorded and the relevant information from the party States in the common format was in the process of being collected. Any finding as to if actual area under irrigation at that time in Karnataka was 11.2 lakh acres or not, was not possible and the Tribunal had just taken note of the area mentioned by Karnataka in Statement K-V on its face value while restraining them from increasing the same during pending proceedings.

36. Even before this Tribunal, parties have pursued their claim of apportionment of waters with reference to the date of the constitution of the Tribunal. This is apparent from the statement filed on behalf of the State of Tamil Nadu marked I series where in respect of Karnataka it has always been said that other areas developed after 1974 under ongoing and proposed projects. Same is the position in other statements filed on behalf of the State of Tamil Nadu during the course of arguments. In note No.39 regarding Group III Issues filed on behalf of the State of Tamil Nadu, on 21.2.2005 at page 45, in the table so far Karnataka is

concerned, the total irrigated area has been shown as 14.315 lakh acres. The same position is in T.N. Statement No. 90 filed on 22.2.06 with the heading irrigation requirement of Karnataka. In column 5 to 8, the areas developed by the Karnataka has been given under different heads kharif paddy, kharif semi-dry, perennial, grand total which according to the Tamil Nadu is 14.315 lakh acres. Obviously they have taken note of extension of areas by Karnataka after 1974 and upto the date of the constitution of the Tribunal. Further, as quoted earlier while discussing the "Principles of apportionment", the Supreme Court had said in the reference case of Cauvery water dispute that the law of apportionment amongst the riparian States was that of equitable apportionment of the waters of an inter-State river. This tribunal has to do that exercise while adjudicating the present dispute. Clause 10(xi) of the 1924 Agreement provides for review of the Agreement in terms thereof, after expiry of 50 years on the basis of experience gained and examination of the possibilities of further extension of irrigation. This clause does not prohibit the arbitration which could have been resorted to under Clause 10(xv) or the Tribunal from taking into consideration subsequent developments. Considering all the aspects, we take the year 1990 for considering the claims of party States.

37. Coming to the total area over which the State of Karnataka is entitled for irrigation through the waters of river Cauvery, it will be proper to refer to the aforesaid statement K-V filed during the hearing of the application for the interim relief made on behalf of the State of Tamil Nadu. In the said Statement it had clearly been stated that the planned

development as in June 1990 was 20.98 lakhs of acres. This statement covered the areas:

- i) Developed prior to the agreement of 1924;
- ii) Permitted in terms of the agreement of the year 1924;
- iii) Developed or committed for development outside the agreement upto June 1990.

38. However, such areas had been planned and schemes had been put into execution much before the year 1990. It may be pointed out that even in the first Written Statement which was filed on behalf of the State of Karnataka in September 1990, the total claim made was for 23.85 lakh acres of ayacut upto June 1990 and about 2.25 lakh acres were mentioned under proposed projects, as the areas to be developed in future. It will be proper to reproduce the same as under:-

"STATEMENT-I STATEMENT SHOWING TOTAL WATER REQUIREMENTS OF KARNATAKA

S. No.	Name of project	Ayacut (000 ha)	Ultimate utilization	
			Mm ³	TMC
1	2	3	4	5
	EXISTING AND ONGOING PROJECTS:	77.1	1,634	57.7
1.	Anicut channels			
2.	K.R.Sagara	79.3	1,733	61.2
3.	Kanva	2.0	34	1.2
4.	Byramangla	1.6	28	1.0
5.	Marconahalli	6.1	113	4.0
6.	Hebbahalla	1.2	11	0.4
7.	Nugu	10.5	218	7.7
8.	Chikkahole	1.7	20	0.7
9.	Mangala	0.8	17	0.6
10.	Suvarnavathy (Stabilization 4034 ha)	2.8	102	3.6
11.	Gundal (Stabilisation 2064 ha)	4.0	40	1.4
12.	Nallur Amanikere	1.3	8	0.3
13.	Kamasamudra L.I.S.	3.1	23	0.8
14.	Huchanakoppalu L.I.S	2.3	16	0.6
15.	Hemavathy	283.6	1,549	54.7
16.	Votehole	7.5	68	2.4
17.	Yagachi	21.5	161	5.7
18.	Kabini	87.9	1,840	65.0

1	2	3	4	5
19.	Harangi	54.6	510	18.0
20.	Chiklihole	1.7	23	0.8
21.	Manchanabele	3.8	23	0.8
22.	Taraka	7.0	89	3.2
23.	Arkavathy	8.6	88	3.1
24.	Iggalur	4.0	51	1.8
25.	Shri D.Devaraj Urs Varuna Canal	32.4	298	10.5
26.	Uduthorehalla	6.3	34	1.2
27.	Modernisation of KRS	2.0	-	-
28.	Minor Irrigation	250.6	2019	71.3
29.	Water supply	-	794	28.0
	Total	965.3	11,546	407.7
	PROPOSED PROJECTS :			
30.	Lakshmanathirtha	2.8	42	1.5
31.	KRS Extension	45.5	232	8.2
32.	Chengavadi	2.6	37	1.3
33.	Lokapavani	3.0	57	2.0
34.	Poorigali Lift Irrigation Scheme	3.6	40	1.4
35.	Minor Irrigation	33.7	394	13.9
36.	Water supply	-	623	22.0
37.	Power Projects- Reservoir losses	-	170	6.0
	Thermal Power Station	-	28	1.0
		91.2	1,623	57.3
	ABSTRACT:			
	a) Existing, and on-going projects	965.3	11,546	407.7
	b) Proposed Projects	91.2	1,623	57.3
		1,056.5	13,169	465.0
	PURPOSE-WISE ABSTRACT:			
	Irrigation		11,553	408
	Bangalore Water Supply		850	30
	Urban Water Supply(other than Bangalore)			
	Rural Water Supply		283	10
	Industrial uses		170	6
	Power Projects(Reservoir losses 6 TMC and		114	4
	Thermal Power Project 1 TMC		199	7
			13,169	465

Ref: Statement of Case, KAR-1, page 161-163)

39. The total claim made for 965.3 th. ha (23.85 lakh acres) included 250.6 th. ha or 6.19 lakh acres for minor irrigation. Subsequently, Karnataka in their counter comments to the comments of Tamil Nadu dated 30th July, 1993 on the information supplied has clarified that gross irrigation under existing minor irrigation was 2.93 lakh acres and under ongoing schemes 37,000 acres, total 3,30,000 acres (Ref: Exh. E-12,

Col. 5 of pages 6 & 7). These figures of minor irrigation have been quoted in K-V as 3,33,000 acres which were again corrected to 3,30,000 acres in their Exh. 518, page 114. It will be worthwhile to compare areas mentioned in Statement K-V with those mentioned in Statement of Case which is given below:-

S. No.	Name of Project	Ayacut		
		As per Statement Of Case		As per Statement K-V
		'000 ha	Lakh acres	Lakh acres
1	2	3	4	5
1.	Anicut Channels	77.1	1.91	1.90
2.	Krishnarajasagar	79.3	1.96	1.96
3.	Kanva	2.0	0.05	0.05
4.	Byramangala	1.6	0.04	0.04
5.	Marconahally	6.1	0.15	0.15
6.	Hebballa	1.2	0.03	0.03
7.	Nugu	10.5	0.26	0.26
8.	Chikkahole	1.7	0.04	0.04
9.	Mangala	0.8	0.02	0.02
10.	Suvarnavathy	2.8	0.07	0.07
11.	Gundal	4.0	0.10	0.10
12.	Nallur Amanikere	1.3	0.03	0.03
13.	Kamasamudra LIS	3.1	0.08	0.08
14.	Huchanakoppalu LIS	2.3	0.06	0.06
15.	Hemavathy	283.6	7.00	7.00
16.	Votehole	7.5	0.19	0.19
17.	Yagachi	21.5	0.53	0.53
18.	Kabini	87.9	2.17	2.17
19.	Harangi	54.6	1.35	1.35
20.	Chiklihole	1.7	0.04	0.04
21.	Manchanabele	3.8	0.09	0.09
22.	Taraka	7.0	0.17	0.17
23.	Arkavathy	8.6	0.21	0.21
24.	Iggalur	4.0	0.10	0.10
25.	D. Devraj Urs (Varuna) canal	32.4	0.80	0.80
26.	Uduthorehalla	6.3	0.16	0.16
27.	Modernization of K.R.S	2.0	0.05	0.05
28.	Minor irrigation	250.6	6.19	3.33
		965.3	23.85	20.98

Source: Karnataka Statement of Case KAR-1, page 161-162 and Annexure K-V.

40. The comparison of the above two statements shows that with the modification of areas under minor irrigation, the area claimed in both statements is almost identical. However, in view of the explanation

given above in respect of minor irrigation – area finally claimed as 3,30,000 acres – the total claim of Karnataka is for an area of 20.95 lakh acres.

41. During the hearing of arguments, claim was made on behalf of the State of Karnataka that they propose to develop irrigation in gross area of about 27.29 lakh acres (Ref: KAR Exh. No.518, page 114 filed on 28.3.2003). As regards gross area which includes the second crop, it has already been explained while examining the claim of Tamil Nadu that owing to limited availability of water in Cauvery basin, no note can be taken of development of second crop. Any claim in excess of 20.95 lakh acres cannot be considered because not only the State of Karnataka gave the details of the areas to be developed till June 1990 in the Statement K-V, but the same claim was made even in its written statement. Therefore, the State of Karnataka cannot be allowed to exceed the said limit for purpose of determination of its just and equitable share in the waters of river Cauvery as a riparian State which has to be determined with reference to the cut-off date i.e., 2.6.1990 when the Central Government in exercise of power conferred under Section 4 of the Inter-State Water Disputes Act (1956) made a reference to the Tribunal.

42. In Statement K-V, Karnataka have furnished claim for a total areas developed and in process of development for irrigation as 20.98 lakh acres. Thus the claim of Karnataka over the additional area which was under progress for irrigation development was 10.30 lakh acres

(20.98 – 10.68) till June 1990 which needs to be considered based on merit and equity for each individual project for deciding equitable apportionment of water amongst the riparian States.

43. Mr Vaidyanathan, learned Senior Advocate, appearing on behalf of the State of Tamil Nadu took a stand that the projects' details whereof have been given in K-V filed by Karnataka, during the hearing of the application for the Interim Relief filed on behalf of the State of Tamil Nadu, had included many such projects which had not been completed and utmost can be said to be ongoing projects. According to him any consideration of a project in connection with the irrigation in a State has to be taken note of only after its completion. In view of the provisions under the Clauses 10(ii) and 10(vii) read with rule 7 of Annexure I imposing restrictions on the impounding and regulation of the reservoirs, the State of Mysore/Karnataka could not extend areas in KRS beyond 1,25,000 acres and even achieve 1,10,000 acres as permitted under Clauses 10(iv) of the Agreement.

44. A statement marked as Statement No.60 was also filed on 15.12.2005 on behalf of the State of Tamil Nadu prepared on basis of aforesaid K-V. In Note No. 2 of the said Statement it has been simply stated: 'Area not admitted by Tamil Nadu'. In other words, it has not disputed that the different projects which have been given in the Statement K-V as well as in Statement No.60 in column 4 had not commenced before 1974. In K-V, the State of Karnataka had given the year of starting of such projects from 1959, 1964, 1970, 1975, 1977,

1978, 1979, 1983, 1985, 1986. In this background such projects cannot be ignored merely on the ground that they had not been completed on 2nd June 1990, when the Tribunal was constituted by the Central Government. In the report of the Krishna Water Tribunal Volume I at page 99 references was made to the case of Wyoming v, Colorado 259 U.S. 419, 469-471, 489-496, decided by the United States Supreme Court where it was pointed out:-

‘..... A project was entitled to priority from the date when the actual work of construction was begun, and not from a date anterior to the time when there was a fixed and definite purpose to take it up and carry it through.’

So far the facts of the present dispute are concerned, the projects in which the objections have been raised had not only been finalized but even according to Tamil Nadu, the construction had started between 1959 and 1986. According to the US Supreme Court, no note should be taken to the project date anterior to the time when there was a fixed and definite purpose to take it up and carry it through. Here even the actual construction work had started, but for different constraints it took such a long time for their completion. As such claim made on behalf of the State of Karnataka for water in respect of such projects have to be examined on merit and cannot be rejected on the ground that those projects had not been completed.

45. However, during the arguments Shri Vaidyanathan stated that at the most the areas which were brought under actual irrigation upto June 1990 could be given priority in allocation of water whereas all the

remaining areas under these projects could be considered only when water is surplus after meeting the needs of party States.

The claim under each scheme based on merit and equity is to be examined, in view of the discussion above.

Anicut channels

46. There are in all 25 Anicut schemes for which the State of Karnataka have furnished details of area under irrigation; out of these, 15 anicuts are situated above KRS reservoir covering an area of 106.688 th. acres and the remaining 10 are situated below KRS reservoir covering an area of 89.820 th. acres; total 196.508 th. acres.

The break-up of this area is given as under:

	(Area in thousand acres)
i) Area existing prior to 1924	135.519
ii) Area developed under the provisions of 1924 agreement	29.547

Out of the above area of 135.519 th. acres, an area of 8.576 th. acres (under Chiklihole + Gundal + Suvarnavathy anicuts) which was under anicuts prior to 1924 has got merged in the ayacut of Reservoir schemes. Thus leaving a balance of 156.49 th. acres ($135.519 - 8.576 + 29.547 = 156.49$ th. acres) under anicut schemes. Hence the additional area developed between 1924 and 1990 under anicuts comes to 40.018 th. acres ($196.508 - 156.490$), which is to be considered on merit and equity.

47. It may be mentioned that this area of about 40,000 acres has been provided irrigation facilities by extending the ayacut area under as many as 25 anicut schemes and that too over a period of more than six decades, to provide livelihood to the farming families and hence appears

to be reasonable. It may also be mentioned that all the above area is under single paddy crop. Therefore, the total area under anicut projects in Karnataka would be 196.508 th. acres.

The following table gives details of area under each of the twenty-five anicut schemes:-

Development of irrigation under anicut schemes in Karnataka
(Area in thousand acres)

S.No./ Exh. No.	Name of anicut scheme	Area prior to 1924 Agreement	Area permissible under 1924 Agreement	Area considered on merit	Total area under anicuts (3+4+5)
1	2	3	4	5	6
(A)	Above KRS				
1/E-27	Krishnarajakatte	6.040	1.585	1.145	8.770
2/E-28	Chamraja	17.783	2.817 3.072*	(-)0.766	22.906
3/E-29	Mirle	4.216	1.405	(-)0.821	4.800
4/E-30	Ramasamudra	6.364	2.179	(-)1.721	6.822
5/E-31	Kudlur	1.900	-	-	1.900
6/E-32	Kittur	0.264	-	-	0.264
7/E-33	Haluvagilu	0.600	-	-	0.600
8/E-34	Shankuthirtha	0.750	-	0.040	0.790
9/E-35	Changravalli	1.200	-	(-)0.234	0.966
10/E-36	Sri Ramdevara	9.660	2.755	(-)0.801	11.614
11/E-37	Mandagere	8.712	(-)3.536	11.613	16.789
12/E-38	Hemagiri	2.420	(-)0.336	1.873	3.957
13/E-39	Hanagodu	5.223	1.500	16.777	23.500
14/E-40	Kattamalalawadi	0.594	0.190	0.276	1.060
15/E-41	Siryur	1.220	0.365	0.365	1.950
16/E-70	Chiklihole	#1.275	-	-	-
	Sub-Total (A)	68.221	11.996	27.746	106.688
(B)	Below KRS				
1/E-42	Devaraya	2.099	0.370	1.057	3.526
2/E-43	Chikkadevaraya	17.174	5.271	3.504	25.949
3/E-44	Virija	7.678	2.199	3.367	13.244
4/E-45	Bangaradoddi	0.815	0.248	(-)0.075	0.988
5/E-46	Ramaswami	8.632	2.461	0.907	12.000
6/E-47	Rajaparameshwari	4.164	1.296	0.023	5.483
7/E-48	Hullahally	12.076	-	2.234	14.310
8/E-49	Madhavamanthri	3.772	0.797	1.255	5.824
9/E-50	Shimsha Shimsha channels(old)	- #3.587	3.599	-	7.186 -
10/E-51	Suvernemukhi	-	1.310	-	1.310
11/E-60	Suvernavaathi	#2.201	-	-	-
12/E-61	Gundal	#5.100	-	-	-
	Sub-Total (B)	67.298	17.551	12.272	89.820
	Grand Total (A) + (B)	135.519	29.547	40.018	196.508

Remarks:1) * Area to be permitted in lieu of submergence $12.500 - 9.428(\text{area covered before } 1924) = 3.072$

2) # Area of four anicuts i.e. Chiklihole, Suvernavaathi, Gundal and Old Shimsha channels merged in reservoir schemes $(1.275+2.201+5.100+3.587)$

(Reference for Col. 3 & 4, TNDC Vol.V, Exh. 283, page 189)

Krishnarajasagara Project (Exh. E-52):

48. As per 1924 Agreement, Karnataka was allowed to develop irrigation in 1,25,000 acres under this reservoir scheme vide Clause 10(iv) comprising of monsoon crop in 85,000 acres and perennial crop in 40,000 acres (Ref: Exh. E-104(C), page 51, para 19 and Exh. E-77, Modernization of KRS – page 1). The work on this project is reported to have been commenced during 1911 under its phase-I for a smaller reservoir capacity of 11 TMC, but under the 1924 Agreement, the reservoir for a larger capacity of 44.827 TMC (effective capacity) was agreed to and the work on which was completed in the year 1931. The breakup of water utilisation given in the 1924 Agreement works out to about 40 TMC as explained herein under:-

In the Appendix to the Rules of Regulation (Annexure 1 to 1924 Agreement) in item 5 of part I relating to the KRS working tables dated 26.7.1921, the average draw off in million cubic feet for each twelve-hourly period for irrigation is given as follows:-

“Month	Monsoon crop	Perennial crop
June, first-half	27
June, second-half	51.5	27
July to November	51.5	27
December	34.5	27
January, first-half	25.7	27
January, second-half	27
February to end of May	27 ”

49. The quantity of water to be released for monsoon crop works out to 20.214 TMC and that for perennial crop works out to 19.71 TMC. The total quantity to be released for irrigation thus works out to about 40 TMC. The average delta for irrigating 1,25,000 acres under monsoon and perennial crops then permitted under the agreement works out to 7.36 ft. which is considered very high as per the present day norms.

50. In view of the provision for extension of irrigation by improvement of duty under Clause 10(xii), it seems feasible for Karnataka to extend an area of about 71,000 acres under KRS reservoir beyond 1,25,000 acres. The proposed breakup being – khariff paddy in about 31,000 acres and rabi and khariff semi-dry crops in 20,000 acres each as single crop. By allowing this extension, Karnataka will be consuming about 38.00 TMC of water which was allowed to them as per the 1924 Agreement and cover a total area of 1,95,972 acres as indicated by Karnataka in their Exh. E-52, page 1, and also claimed in Statement K-V as 1,96,000 acres. Therefore, out of the effective capacity of 44.827 TMC, 38.00 TMC gets consumed under the KRS reservoir command which would be within the provisions of the 1924 Agreement.

Other Reservoir Projects taken up by Karnataka on the non-scheduled rivers before 1974:

51. The State of Karnataka had included the following projects in K-V at item No. 3 to 9, 11 & 21:-

- 3) Kanva
- 4) Byramangala
- 5) Marconahalli

- 6) Hebbala
- 7) Nugu
- 8) Chikkahole
- 9) Mangala
- 11) Gundal
- 21) Manchanbele (Serial Nos. as per K-V)

The above nine projects have already been dealt with under clause 10(xiii) of 1924 Agreement, however, in respect of the Gundal reservoir project, some area has been disallowed for the reasons described hereunder:-

Gundal Reservoir Project (Exh. E-61):

52. Gundal Reservoir Project was taken up by Karnataka during the year 1970 and later on claimed under clause 10(xiii) of the 1924 Agreement. This project provided for 10,000 acres of new irrigation and 5,100 acres of stabilization of the ayacut area already existing prior to 1924 under anicut channel. This project has therefore, been dealt under the provisions of the 1924 Agreement. However, it has been noticed that this reservoir did not receive inflows as were estimated in the Project report and this aspect was dealt with in detail during the cross examination of Karnataka Witness No. 5 – Dr. Rama Prasad by the learned Senior Counsel on behalf of Tamil Nadu, Shri Ganguli, when it was accepted by Dr Rama Prasad that the inflows have fallen short of the estimated yield for which this project was designed. In this connection a reference to the following cross examination would be pertinent:

“Q. 1036. Now turn to page 13-2, next page, second paragraph, it is stated:

`Runoff, one of the basic hydrologic data and its estimation plays an important role in the design of the above mentioned irrigation project. Otherwise, the design that scanty hydrology data may result in failure of the purpose for which the project is designed.'

Then it says:

`In the present case, the Gundal Reservoir project in Karnataka State has failed since the yield estimated at the time of planning the project has not been realised after the construction of the project.'

Have you seen that?

A. Yes"

In the above connection it may be mentioned that on the estimation of the yield of the Gundal Reservoir Project, a paper was presented which was co-authored by Dr Ram Prasad who was being cross examined as witness on behalf of State of Karnataka. The paper is exhibited in TN Volume 36, Exh. 1380.

"Q.1040. Now, you have seen that while the estimated yield was 51.62, the actual yield that was found was only 7.96.

A. Yes.

Q. 1041. Then at page 13-7, is recorded the conclusions of all the three of you and this is what you have stated in your conclusions:

`The reasons for the large discrepancy between the estimated yield and the gauged yield can be listed as under:'

There are four reasons attributed:

1. Adoption of the available insufficient hydrologic data at the time of planning the project report.
2. The improper selection of rain gauge stations and use of their data for estimation of yield.
3. Absence of the knowledge of the storm direction'.

(An important criteria that you have listed is invariably noticed).

And number 4. This is what I was mentioning to you. Your conclusion was:

3. Inapplicability of Strange's table of run-off.'

You find that, Prof. Rama Prasad?

A: Yes. That was for the rain gauge stations selected before the design."

53. It is further seen from the common format data furnished by Karnataka that the maximum irrigation under this Project has been in the year 1994-95 when a gross area of 6,133 acres has been irrigated which again dropped to 3,900 in the subsequent year i.e., 1995-96. Thus on consideration of this Project on merit, it can at the most be allowed stabilization of old ayacut under anicut i.e, 5,100 + new irrigation in about 2,000 acres only, total being 7,100 acres.

54. It may be mentioned that Gundal is an independent tributary on which this reservoir has been built and when there is normally insufficient water, there is no point in projecting larger area under the ayacut. Even the area permitted can be adequately covered if there is sufficient inflow. However, since the infrastructure namely, dam and appurtenant canal works have been built, it would be advisable to allow irrigation in an area which they have covered in any good rainfall year and accordingly a total of 7,100 acres is being allowed and if there is good rainfall and more yield, remaining ayacut may be provided some irrigation.

55. Similarly in respect of the Manchanabele reservoir project, the position is discussed below:-

Manchanbele Reservoir Project (Exh. E-71):

This Reservoir Project is reported to have been taken up in the year 1970 and the State of Karnataka has claimed this under clause 10(xiii) of the 1924 Agreement and has accordingly been dealt with therein. However, an examination of the common format data indicates that though the project is said to have been taken in hand in the year 1970, the same is being shown as under construction even in 1995-96 and, therefore, there has been no irrigation shown under this Project. As the project is in semi arid region of Arkavathy sub-basin and proposes to raise 7,000 acres of khariff semi-dry crop and 2,500 acres of mulberry gardens which is a perennial crop, it would be advisable to restrict the cropping pattern to only khariff semi-dry crop and accordingly an area of 9,500 acres under khariff semi-dry crop is allowed.

Suvarnavathy Reservoir Project (Exh. E-60):

56. This Reservoir Project was reported to have been taken up by Karnataka in the year 1965 and later claimed as an offset reservoir under clause 10(xiv) in lieu of Amaravathy reservoir built by the then State of Madras. Accordingly the same has been dealt with under the provisions contemplated in 1924 Agreement.

Nallur Amanekere Project (Exh. E-62)

57. This project was taken up in 1975 to irrigate 3,200 acres of khariff semi-dry crop. Since this is a minor project on which the work was taken up 15 years before the constitution of the Tribunal, the same is being allowed.

Kamasamudra and Huchanakoppalu Lift Irrigation Schemes
(Exh.E-63 & E-64)

58. The State of Karnataka have included these two lift irrigation schemes for covering an area of 8,000 acres and 6,000 acres respectively with about 200% annual intensity of irrigation. These lift irrigation schemes and that too with about 200% intensity, seem to be too ambitious. As such the same have not been considered.

Hemavathy Reservoir Project (Exh. E-65):

59. This is an important project of Karnataka which is quite ambitious to take water to drought affected areas in the Shimsha sub-basin through a tunnel named Bagur–Navile – 9.8 km. long and 5.4 m. diameter. The tunnel facilitates taking water across the ridge dividing upper Cauvery sub-basin (C-1) and Shimsha sub-basin (C-4). The project was taken up in the year 1968 under the provisions of 1924 agreement as permitted in clause 10(iv) to cover new irrigation in an area of 1,10,000 acres. The reservoir capacity which was originally designed for 21.7 TMC (Ref: Revised Project Report, Exh. KR Vol. VIII, S.No.300-301, opening page, Preamble - para 2) was later on modified and increased to about 34 TMC; similarly, the initial proposed ayacut was for one lakh acres which was later on revised to cover an area of 7,00,000 acres – under diversified cropping pattern – mostly semi-dry crops, out of which 6,55,000 acres area is to be covered by flow irrigation and the balance of about 45,000 acres by lift irrigation. Thus the scope of the project is

much more than the original provision for extension of irrigation in an area of 1,10,000 acres.

60. However, since clause 10(xii) of the 1924 agreement allows extension of irrigation by way of improvement of duty, an area of 2,01,000 acres has been considered under that clause as the water requirement for the same gets covered within the originally designed capacity of reservoir i.e., 21.7 TMC, besides the permitted new irrigation of 1,10,000 acres under clause 10(iv).

61. However, as the reservoir has already been constructed for an increased effective capacity of 34 TMC for covering drought affected areas, it becomes possible for Karnataka to cover additional areas as provided under Clause 10(vii) of the Agreement of 1924 which permits Mysore/Karnataka to build reservoirs of a total capacity of 45 TMC and extend new irrigation of 1,10,000 acres. Thus the State of Karnataka can fully cover the entire flow area of 6,55,000 acres in the drought affected areas. The break-up of 6,55,000 acres under Hemavathy Project will be as under:-

i)	Under clause 10(iv)	1,10,000 acres
ii)	Under clause 10(xii) *	2,01,000 “
iii)	Considered on merit	<u>3,44,000</u> “
	Total	<u>6,55,000</u> acres

***Clause 10(xii) of the 1924 Agreement provides that the States of Madras and Mysore had further agreed that the limits of extension of irrigation specified in Clauses 10(iv) and 10(v) shall not preclude extension of irrigation effected solely by improvement of duty, without any increase in the quantity of water used.**

Votehole reservoir project (Exh. E-66)

62. This project was taken up in the year 1976 to irrigate an area of 18,500 acres, comprising of 5,500 acres under khariff paddy and 13,000 acres under rabi semi-dry crop as indicated in the common format data. On perusal of the rainfall data during November to February i.e. rabi period, it is observed that there is no dependable support from rainfall from November to February for the rabi semi-dry crop proposed in 13,000 acres. Therefore, it would be advisable to advance rabi semi-dry crop and raise the same from October to January. With this modification, the proposal of irrigating 18,500 acres seems reasonable and is being allowed.

Yagachi Reservoir Project (Exh. E-67)

63. This project was taken up in the year 1984 on Yagachi river in the upper Cauvery basin above Hemavathy reservoir. The ayacut of 53,000 acres is proposed to be irrigated with the following cropping pattern:-

(i)	Khariff paddy	-	10,000 acres
(ii)	Khariff semi-dry crop	-	21,400 "
(iii)	Rabi semi-dry crop	-	21,600 "

64. Since Karnataka in their Statement of Case (para 15.2, page 62) have clearly indicated that in the new projects, the State is proposing semi-dry crops; as such, raising paddy crop does not seem to be advisable. Further, it is seen that there is hardly any rainfall support from November to February, the period of proposed rabi semi-dry crop could therefore be advanced from October to January instead of

November to February. In view of the above, it would be advisable to consider the following cropping pattern:-

Khariff semi-dry in 31,400 acres and rabi semi-dry in 21,600 acres covering the entire 53,000 acres ayacut with 100% intensity of irrigation.

Kabini Reservoir Project(Exh.E-68)

65. The State of Karnataka has claimed that the Kabini reservoir project has been constructed as an offset reservoir under Clause 10(xiv) of the 1924 Agreement in lieu of the Lower Bhavani reservoir constructed by the then Madras State. The State has submitted Kabini project (Report and Estimate) vide KAR Vol. VII, Exh. 299; on page 1 of the report, it has been mentioned that:-

“The Kabini project as per original proposal contemplated to impound 12.0 TMC of water and irrigate an area of 30,000 acres at an estimated cost of Rs.320 lakhs. This project was administratively approved under Govt. order No. PWD 1-KRP 57 dated 2nd/4th February, 1959.”

The work on the project was commenced in the year 1959 is reported to have been commissioned in 1974. Later on, during the course of construction of the project, the scope was revised in the year 1970 for increasing gross capacity of the reservoir to 19.52 TMC to irrigate an area of 1,13,000 acres of ayacut under the right and left bank canals (Ref: ibid, page-1, last paragraph).

66. Subsequently, in the Common Format Information submitted during January, 1993, Karnataka State in their Exh. E-68, in respect of

Kabini project have furnished revised scope of irrigation under this project, whereby, about 28 TMC of water has been proposed to be lifted to a height of 212 ft. from Kabini reservoir during four monsoon months at the rate of 7.0 TMC per month and taken to Nugu and Sagare valleys. The total irrigation from the Kabini reservoir water was increased from 1.13 lakh acres to 4.274 lakh acres proposing large areas under second crop. The scheme with revised scope as placed before this Tribunal vide Exh. E-68, seems to be too ambitious; by planning the project in this manner, Karnataka intends to utilize the entire available water in Kabini river at the dam site after reserving 26.8 TMC of water for use by Kerala State (Ref: KAR Vol. VII – Kabini Project, Exh. 299, page 6-8). The revised scope proposes about 193% annual intensity of irrigation in an ayacut of 1,13,000 acres and 200% in the areas covered in Nugu and Sagare valleys after lifting the water from Kabini reservoir; obviously, such proposals cannot be considered in a basin like Cauvery which is highly water deficit. It is necessary to curtail the scope of this project and allow only flow irrigation in an area of 1.13 lakh acres at 100% intensity of irrigation annually, under Clause 10(xiv) of the 1924 Agreement.

Harangi reservoir project (Exh. E-69)

67. The State of Karnataka has claimed that they have undertaken Harangi Reservoir Project on a non-scheduled river in terms of the provisions of the 1924 Agreement (Ref: KAR Vol. 65 Exh. 518, page 100, at item 14 of the table). But this stand of Karnataka does not appear to be tenable, since Harangi is a major tributary of Cauvery river

and its waters were being fed into KRS reservoir right from the beginning; also before reorganisation of the State, this river was in the then Coorg State. It may also be mentioned that when Coorg State wanted to construct some irrigation work on Harangi river, the then State of Mysore had objected giving reference to the 1924 Agreement. Therefore, any development on Harangi river is to be considered under merit only.

68. Harangi reservoir project was taken up for construction in the year 1964 and was partially commissioned during 1980. The ayacut of the project is reported as 1,34,895 acres which includes 31,500 acres through lift irrigation. Thus, the ayacut to be served by gravity flow is only 1,03,395 acres. The State has further proposed double cropping covering gross area of 1,70,025 acres under irrigation, the bulk of which would be under lift scheme which proposes annual intensity of irrigation as 200%. In view of the constraint of available supplies, lift component of the scheme has not been considered and only 1,03,395 acres to be served by gravity flow for single crop is being considered. In addition, the State has indicated that about 1,500 acres of area is to be covered by Somwarpet Lift Scheme for the benefit of displaced persons from the reservoir area. This component has been taken into consideration on humanitarian grounds to provide continued sustenance to the people displaced by the project. Therefore, a total area of 1,04,895 acres (1,03,395 by flow + 1,500 by lift) seems to be reasonable with a cropping pattern of 17,067 acres under khariff paddy, 60,000 acres

under khariff semi-dry crop and 27,828 acres under rabi semi-dry crop. The State Govt. had also indicated in June, 1990 in their Statement No. K-V that about 85,000 acres of area has been developed for irrigation when the Tribunal had in their interim order directed status-quo to be maintained. In these circumstances, the project deserves to be considered on merit.

Chiklihole reservoir project (Exh. E-70)

69. This reservoir project covering an ayacut of 4,200 acres was taken up in the year 1978 proposing an intensity of irrigation as 129%. There is already an existing anicut with the same name "Chiklihole" which was existing in the Coorg area and got transferred to Karnataka during 1956 under the reorganisation of States. The present dam has been constructed just upstream of that existing anicut. An ayacut of 1,275 acres which was served by the anicut has been merged with the ayacut of the reservoir project which is now 4,200 acres. Since the ayacut of 1,275 acres under the anicut was existing in pre-1924 period, the same has been accounted for in the statement of area pertaining to pre-1924 period. As such, only the balance of 2,925 acres has been considered under this project for khariff semi-dry crop on merit limiting the intensity of irrigation to 100% instead of 129% proposed by the State.

Taraka reservoir project (Exh. E-72):

70. The construction on this reservoir project was commenced in the year 1970 to cover net irrigated area of 17,400 acres. However, the

State has proposed double cropping to have gross cropped area in 32,400 acres which obviously cannot be taken note of in view of the shortage of water in the Cauvery basin. Therefore, based on merit that the project was taken up about 20 years before constitution of this Tribunal, we are inclined to allow single semi-dry crop during khariff season in an area of 17,400 acres at 100% intensity of irrigation.

Arkavathy reservoir project (Exh. E-73)

71. This project was taken up in the year 1975. The State has proposed to provide irrigation in an ayacut of 15,400 acres wherein 7,500 acres is by gravity flow with 200% intensity of irrigation, which obviously cannot be taken note of as the project is located in semi-arid zone. Further, the State has also proposed 7,900 acres of lift irrigation which is also not being considered. Thus, under this project, only flow ayacut of 7,500 acres with 100% intensity of irrigation is being considered for khariff semi dry crop based on merit.

Iggalur reservoir project (Exh. E-74)

72. This project was taken up in the year 1979 to cover an ayacut of 10,000 acres which comprises of only 3,650 acres by gravity flow and the remaining 6,350 acres by various lift schemes. Obviously, the proposal to cover larger areas under lift schemes which are also costly cannot be considered. Thus, under merit, an area of 3,650 acres for single khariff semi-dry crop is being considered.

Devraj Urs Canal (Varuna Canal) (Exh. E-75)

73. The State of Karnataka has proposed construction of Devraj Urs Canal (Varuna Canal) for covering an area of 80,000 acres under semi-dry crop. It has been mentioned that the construction on this canal was taken up during 1979 (Reference K-V and Exh. E-75).

74. The State of Karnataka in their K-V statement submitted before this Tribunal had mentioned that in June 1990, the area planned for irrigation under this canal was only 80,000 acres. However, in the common format information submitted later on before this Tribunal vide Exh. E-75 they have mentioned that an intensity of 174% is proposed for this canal system. That means in 74% of the ayacut they want to raise second crop which seems to be rather too ambitious a proposal and cannot be considered, especially, when there is constraint of availability of river water.

75. In view of the above position, only single Khariff semi-dry crop in 80,000 acres of area is considered which was also originally planned by Karnataka as indicated in their K-V statement based on merits and equity. Further the command of this canal (Varuna canal) touches of the command of Kabini Reservoir and the crop water requirement for Khariff semi-dry crop can reasonably be considered as assumed for the adjoining command of Kabini Reservoir.

Uduthorehalla reservoir project (Exh. E-76)

76. This project is reported to have been taken up in the year 1978 in Palar sub-basin to cover an area of 16,300 acres comprising of 15,500

acres of fresh ayacut and 800 acres of stabilization of existing ayacut. The project is being considered on merit for single semi-dry crop since the project command falls in semi-arid zone and would provide some means of livelihood to the farming families.

Modernization of KRS

77. The State has proposed increasing area under irrigation by about 5000 acres by way of modernization which is expected to result in some savings in the water. Since under this parameter of savings in water, we have already allowed Devraj Urs Canal, there does not seem to be any justification for increase in area any more. As such this proposal is not being considered.

Minor irrigation:

78. As mentioned earlier, 1924 Agreement does not speak of any development under the minor irrigation works. However, both the States namely: Karnataka and Tamil Nadu have been developing minor irrigation works in the Cauvery basin territory within their respective States to meet with the demands of small and marginal farmers and by the year 1990, the State of Karnataka had developed a total area of 2,93,000 acres out of which 2,03,900 acres was existing prior to 1924. Additionally 37,000 acres were under ongoing schemes. Thus, a total of 1,26,100 acres has been developed during the period 1924 to 1990. These figures of minor irrigation are also reflected in KAR Vol. 65 Exh. 518, page 114 dated 28.3.2003. We are inclined to consider this area

on merit as it provides sustenance to the small and marginal farming families.

79. The projectwise details of the area considered on merit and equity are given below:-

		Figures in acres	
(1)	Anicut channel	-	40,018
(2)	Devraj Urs (Varuna) Canal	-	80,000
(3)	Nallur Amanekere	-	3,200
(4)	Votehole	-	18,500
(5)	Yagachi	-	53,000
(6)	Harangi	-	1,04,895
(7)	Chiklihole	-	2,925
(8)	Arkavathy	-	7,500
(9)	Iggalur	-	3,650
(10)	Taraka	-	17,400
(11)	Uduthorehalla	-	16,300
(12)	Hemavathy	-	3,44,000

		Total -	6,91,388 acres
			=====

Thus, the projects undertaken by Karnataka outside the provisions of the agreement of 1924 which have been examined and allowed on merit cover an area of 6,91,388 acres.

80. Area existing under irrigation prior to 1924 and that which was permitted to be developed under the different provisions of the 1924 Agreement, besides the extension of area and minor irrigation works during the period 1924 to 1990 are as under:-

		Figures in acres	
1)	Pre-1924	-	3,43,943
2)	Permitted under the various terms of 1924 Agreement.	-	7,23,909
3)	Under merit		
(a)	Projects	-	6,91,388
(b)	Minor Irrigation	-	1,26,100

		Total -	18,85,340 acres <u>Say 18.85 lakh acres</u>

The projectwise details of irrigated areas indicated above are given the following statement:-

Details of irrigated area considered under different categories for the State of Karnataka(As on June, 1990) (Area in thousand Acr

S./ Exh. No.	Name of Project (Sub-basin)	Area under Irrigation prior to 1924	Additional area permissible under 1924 agreement	Development/ extension to be considered on merit/equity as per availability of water	Area considered looking to availability of water (Col. 3+4+5)	Remarks
1	2	3	4	5	6	7
1.	Anicut channels (All Sub-basins)	135.519	29.547	40.018	196.508*	Flow ayacut of all anicut channels proposed by the State has been considered with 100% intensity.* 8.576 TH. Ac. merged with the area of reservoir projects
2/ E-52	Krishnarajasagara (Upper Cauvery)	4.524	191.448	-	195.972	As per agreement 125 Th. Ac. area to be irrigated but with the reservoir capacity 40 TMC of Water (Ref: 1924 Agreement, Part I, KRS working tables, Para 5(26.7.1921), the delta (7.36 ft) works out to very high. Considering reasonable utilization i.e. by improvement of duty 70.972 Th. Ac. additional area i.e. all flow of CCA proposed 195.972 Th. Ac. and also ayacut proposed under Dev Raj Urs Canal (80 Th. Ac. which has to be considered on merit) has been considered for appropriate utilization.
3/	Kanva(Shimsha)	-	6.365	-	6.365	Ayacut proposed in the project report considered.
4/E-54	Byramangala (Arkavathy)	-	4.000	-	4.000	-do-
5/E-55	Marconahally (Shimsha)	-	15.000	-	15.000	-do-
6/E-56	Hebballa (Kabini)	-	3.050	-	3.050	-do-
7/ E-57	Nugu (Kabini)	-	18.110	-	18.110	State has reduced the ayacut which has been considered. Lift area not considered.
8/ E-58	Chikkahole (Suvernavathi)	-	4.076	-	4.076	Ayacut proposed in the project report considered.
9/ E-59	Mangala (Shimsha)	-	2.320	-	2.320	-do-
10/ E-60	Suvernavathi (Suvernavathi)	-	14.493	-	16.694	The ayacut proposed in the project report including area of 2.201 Th. Ac. (under anicut channels) prior to 1924, has been considered.

1	2	3	4	5	6	7
11/ E-61	Gundal (Middle Cauvery)	-	2.000	-	7.100	The ayacut proposed in the project report including area of 5.100 Th. Ac. (under anicut channels) prior to 1924, has been considered.
12/ E-62	Nallur Amanekere (Kabini)	-	-	3.200	3.200	Ayacut proposed in the project report considered
13/ E-63	Kamasamudra Lift (Middle Cauvery)	-	-	-	-	Lift schemes not recommended.
14/ E-64	Huchanakoppalu Lift (Middle Cauvery)	-	-	-	-	-do-
15/ E-65	Hemavathy (Upper Cauvery)	-	311.000	344.000	655.000	As per 1924 Agreement, 45 TMC of water was allowed for extension of new irrigation in Mysore. In 1973, Karnataka has submitted revised project estimate to utilize 34 TMC of water to irrigate 100 Th. Ac. area. Considering water utilisation with reasonable delta, the area that can be irrigated works out to 311.000 Th. Ac. But, as water to the extent of 45 TMC is available, allowing use of entire 45 TMC, the entire flow area of 655 Th. Ac. got covered. Accordingly, 344.000 Th.Ac. area to be considered on merit.
16/ E-66	Votehole (Upper Cauvery)	-	-	18.500	18.500	Ayacut proposed in the project report considered
17/ E-67	Yagachi (Upper Cauvery)	-	-	53.000	53.000	-do-
18/ E-68	Kabini (Kabini)	-	113.000	-	113.000	Ayacut under flow considered with 100% intensity.
19/ E-69	Harangi (Upper Cauvery)	-	-	104.895	104.895	Ayacut under flow as proposed in the project report considered except lift area of Somvarpet.
20/ E-70	Chiklihole (Upper Cauvery)	-	-	2.925	4.200	Ayacut as proposed considered including 1.275 Th. Ac. of area (under anicut channel) prior to 1924.
21/ E-71	Manchanabele (Arkavathy)	-	9.500	-	9.500	Ayacut as proposed in the project report has been considered.
22/ E-72	Taraka (Kabini)	-	-	17.400	17.400	-do-
23/ E-73	Arkavathy (Arkavathy)	-	-	7.500	7.500	Ayacut under flow only considered

1	2	3	4	5	6	7
24/ E-74	Iggalur (Shimsha)	-	-	3.650	3.650	-do-
25/ E-75	Devraj Urs Canal (Upper Cauvery)	-	-	80.000	80.000	Ayacut with 100% intensity considered as stated above in case of KRS.
26/ E-76	Uduthorehalla (Palar)	-	-	16.300	16.300	Ayacut as proposed considered
27/ E-77	Mod. K.R.S. (Upper Cauvery)	-	-	-	-	Benefits from modernization to be distributed in the entire ayacut under KRS, hence additional area not considered.
	Total (1 to 27)	140.043	723.909	691.388	1555.340	
28.	Minor Irrigation (All Sub-basins)	203.900	-	126.100	330.000	The reported area of 330 Th. Ac. (Ref: E-12, page 6 & 7 and KAR Exh.518, page 114 dated 28.3.2003)
	Grand Total	343.943	723.909	817.488	1885.340	

81. It is made clear that although the claims of Tamil Nadu and Karnataka have been examined in respect of areas requiring irrigation in four groups; (i) areas existing prior to 1924 Agreement; (ii) areas contemplated for development under different terms of the 1924 Agreement; (iii) areas developed outside the Agreement during the period 1924 to 1990, and (iv) on merit and equity, the areas assessed by the Tribunal under the above groups do not get any right of priority to receive water in preference to any particular group. All areas under four groups have to be treated at par for the purpose of providing water according to the need and necessity. The claim of each party has been examined according to the need and necessity of that State and water apportioned on the principle of equitable apportionment of inter-State water. Thus, all the areas which have been assessed by this Tribunal to receive irrigation supplies shall have to be treated on equal footing.
