महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण

Maharashtra Water Resources Regulatory Authority (MWRRA)

9th Floor, Centre-1, World Trade Centre, Cufffe Parade, Mumbai - 400005. Tel.: 2215 2019 Fax.: 2215 3765 E-mail: mwrra@mwrra.org

No. MWRRA/legal/2016/Case No 2 of 2016/**142** Date: 17/03/2016

CASE NO.2 OF 2016

In the Matter of

Releasing water from Kukadi Complex into the Ghod dam as per Sections 11 and 12 of the MWRRA Act, 2005 and carrying out equitable distribution for the Ghod sub-basin and deciding water quota for Ghod.

Shri. Rajendra Shivaji Rao Nagawade
At Post Wangdari, Taluka Shrigonda, District - Ahmednagar
&
Shri. Shrinivas Baburao Ghadge
At Post Inamgaon, Taluka Shirur, District - Pune
Both through Advocate S R Palande, Pune

..... **Petitioners**

Vs

The Secretary (WRM & CAD), State of Maharashtra & others

Please find herewith a copy of MWRRA Order dated 17/03/2016 in the matter.

Encl : As above

(Dr. Suresh Kulkarni)
Secretary

Copy for information and necessary action to:

1. Secretary, (WRM & CAD) Water Resources Department, Madam Kama Marg, Hutatma Rajguru Chawk, Mantralaya, Mumbai – 400032.

2. Executive Director, Maharashtra Krishna Valley Development Corporation, Sinchan Bhavan, Barane Road, Mangalwar Peth, Pune – 11.
3. Chief Engineer, (Specified Project), Water Resources Department, Sinchan Bhavan, Barne Road, Mangalwar Peth, Pune – 411 011.
4. Superintending Engineer & Administrator, CADA, Sinchan Bhavan, Barne Road, Mangalwar Peth, Pune 411 011.
5. The Collector, Collectorate Office, Vidhan Bhavan, New Building, Bund Garden, Pune - 411001.
6. The Collector, Collectorate Office, College Area, Ahmednagar – 414001.

Copy for information to:

1. Advocate S R Palande, Lawyers Chamber No A-1, District Court Campus, Shivajinagar, Pune 411005 *for Shri. Rajendra Shivaji Rao Nagawade, At Post Wangdari, Taluka Shrigonda, District – Ahmednagar & Shri. Shrinivas Baburao Ghadge, At Post Inamgaon, Taluka Shirur, District - Pune.*
2. Shri. Dilip Dattaraya Valse Patil, MLA, Ambegaon, 14 River View Apartment II, Pune Nagar Road, Yervada, Pune 411006.
3. Shri. Sharaddada Sonavane, MLA, Junnar, Raigad, Chalakwadi (Pimpalvandi), Taluka Junnar, District Pune 412412.
4. Shri. Vijay Bhaskarrao Auti, MLA, Parner. At Post Parner, District Ahmednagar 414302.
5. Shri Devdatta Jayantrao Nikam, Chairman, Bhimashankar Sahakari Sakhar Karkhana Ltd, Pargaon, Taluka Aambegaon, District Pune 410504.
6. Shri. Babanrao Pachpute, Ex. Minister, Mauli Nivas, Shringonda, District Ahmednagar 413701.
7. Shri. Narayan Govidrao Patil, MLA: Karmala, Jeur, Taluka Karmala, District Solapur 413202.
8. Shri. Rahul Jagtap MLA, Shrigonda, At Post Pimpalgaon Pisa, Taluka Shrigonda, District Ahmednagar – 413703.
9. Adv. U. B. Nighot for Shri. Raosahebdada Ghodganga Sahakari Sakhar Karkhana, Raosahebnagar, At Post Nahvare, Taluka Shirur District – Pune – 412210.
10. Smt. Aashatai Buchake, Opposition Leader, Pune Zilla Parishad, Yashavantrao Chavhan Bhavan, New Administrative Building, Velsaly Road, Camp, Pune – 411 001.
11. Dr. D. M. More, 7/1 Pritamnagar, Karve Road, Kothrud, Pune 411029.

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&

Shri. Shrinivas Baburao Ghadge
At Post Inamgaon, Taluka Shirur, District - Pune
Both through Advocate S R Palande, Pune

..... **Applicants**

Versus

1. Secretary, (WRM & CAD) Water Resources Department, Madam Kama Marg, Hutatma Rajguru Chawk, Mantralaya, Mumbai - 400032.
2. Executive Director, Maharashtra Krishna Valley Development Corporation, Sinchan Bhavan, Barane Road, Mangalwar Peth, Pune - 11.
3. Chief Engineer, (Specified Project), Water Resources Department, Sinchan Bhavan, Barne Road, Mangalwar Peth, Pune - 411 011.
4. The Collector, Collectorate Office, Vidhan Bhavan, New Building, Bund Garden, - 411001.
5. The Collector, Collectorate Office, College Area, Ahmednagar - 414001.

..... **Respondents**

M. W. R. R. A. MUMBAI

ORDER

CORAM : Shri RAVI B.BUDHIRAJA, Chairman
Smt. CHITKALA ZUTSHI, MEMBER (Economy)

Date: 17 March, 2016

Shri. Rajendra Shivajirao Nagawade at Post Wangdari, Taluka Shrigonda, District - Ahmednagar and Shri. Shrinivas Baburao Ghadge at Post Inamgaon, Taluka Shirur, District – Pune, filed an application before us on 4th September, 2015. The said applicants are farmers from Ahmednagar and Pune districts. The respondents in the said application are: 1) Secretary (WRM & CAD), WRD, Govt. of Maharashtra, Mumbai, 2) District Collector, Pune, 3) District Collector, Ahmednagar and 4) Chief Engineer, Maharashtra Krishna Valley Development Corporation, Pune ("MKVDC"). The prayers made in the said application in Marathi reads as follows:

१) *घोड प्रकल्पातंर्गत लाभक्षेत्रातील भागास शेतीसाठी, पिण्याचे पाण्यासाठी कोटा ठरवून देण्यात यावा व सदरच्या कोट्यानुसार पाणी वाटपाचा व पाण्याचे आवर्तनाचा कार्यक्रम ठरवून मिळावा.*

२) *घोड धरणाचे पाणलोट क्षेत्रातील डिंभे, वडज, माणिकडोह, येडगाव, पिंपळगावजोगे या धरणातून तसेच खुबी बंधारा व सोबतचे परिशिष्टातील कोल्हापूर बंधा-यातून घोड धरणामध्ये महाराष्ट्र जलसंपत्ती नियमन कायदा २००५ कलम १२(६) (क) नुसार समान न्याय पध्दती व कोटयानुसार पाणी सोडण्यात यावे. सदरचे डिंभे व इतर धरणातील पाणीसाठा घोड धरणात सोडून डिंभे धरणाप्रमाणे घोड धरणातील जलसाठा होईल इतके प्रमाणात पाणी सोडावे.*

३) *महाराष्ट्र जलसंपत्ती नियमन कायदा २००५ कलम ११ व १२ मधील तरतूदीनुसार घोड धरणाचे लाभक्षेत्रातील शेतक-यांना शेतीसाठी त्याचप्रमाणे पिण्याचे पाण्यासाठी वरील धरणातून घोड धरणात पाणी सोडण्याचा हुकूम व्हावा. घोड लाभक्षेत्रातील शेतक-यांना*

टंचाई परिस्थितीत कलम १२(६) (ब) नुसार एक एकर शेतीसाठी पाणी पुरवठा करण्याचा नियोजनबध्द व कालबध्द आवर्तनाचा कार्यक्रम तयार करण्यात यावा.

४) महाराष्ट्र जलसंपत्ती नियमन कायदा २००५ कलम १२(६) नुसार घोड धरणाचा पाण्याचा कोटा निश्चित करण्यात यावा. निश्चित केलेला कोटा तातडीने घोड धरणात सोडून दुष्काळी परिस्थितीचे निवारणासाठी तातडीचे नियोजन करण्यात यावे.

५) उन्हाळी हंगामामध्ये पाणीसाठयाचे स्थलांतराने मोठ्या प्रमाणावर होणारे पाण्याचे नुकसान व अपव्यय टाळण्यासाठी त्वरीत कोट्यानुसारचा जलसाठा घोड धरणात स्थानांतरीत करण्यात यावा व दुष्काळी सदृश्य परिस्थितीत तो संरक्षित करण्याबाबत योग्य ती उपाय योजना करण्यात यावी.

६) महाराष्ट्र जलसंपत्ती नियमन कायदा २००५ मधील तरतूदींचे अनुषंगाने डिंभे व इतर धरण प्रकल्पातील पाणी वाटपाबाबत न्याय व हक्कानुसार पाणी वाटपाचा, पाण्याच्या आवर्तनाचा कालबध्द कार्यक्रम तयार होईपर्यंत सदर जलसाठयाचा वापर रोखण्यात यावा. वरील विनंतीचे अनुषंगाने होणारे आदेशांचा तातडीने अंमल घेणेचे जाबदेणार यांना आदेश व्हावेत.

७) इतर योग्य व न्यायाचे हुकूम व्हावेत.

The English translation of aforesaid prayers reads as follows:

"Prayers"

"1) *Fix the quota for irrigation and drinking water for the command of Ghod project and as per the quota, fix the programme of water distribution and water rotation;*

2) *Release the water for the command of Ghod project from Dimbhe, Wadaj, Manikdoh, Yedgaon, Pimpalgaon-Joge dams and Khubi weir as also from the list of K. T. weirs enclosed as per Section 12(6)(c) of MWRRA Act, 2005 in an equitable manner. Release the water into the Ghod dam so that the storage in the Ghod dam will be the same as in the Dimbhe and other dams;*

3) *Order should be issued for release of water from upstream dams into Ghod dam for irrigation and drinking in the command of Ghod dam under*

sections 11 and 12 of MWRRA Act, 2005. During the distress condition in Ghod command a time bound programme should be prepared for giving water to atleast 1 acre of land as per Section 12(6)(b);

4) Fix the quota for the Ghod dam as per Section 12(6) of MWRRA Act, 2005. The fixed quota should be released immediately to meet the scarcity situation;

5) During the hot weather season there will be a huge loss of water so release the water immediately as per the quota into the Ghod dam and take measures to conserve it during the scarcity conditions;

6) Till the programme is fixed as per the MWRRA Act, 2005 for the equitable distribution of water, the water use of Dimbhe and other dams should be stopped. Orders for implementation of the above should be issued immediately to the respondents;

7) Issue other just and legal orders."

2) The aforesaid application was dealt with and disposed of by our Order dated 27th October, 2015 in Case No. 7 of 2015 with findings and directions contained therein. Subsequently, an application seeking review of the said order dated 27th October, 2015 came to be filed by the Executive Director of MKVDC, Pune. The said application for review was dismissed by our Order dated 25th November, 2015. The Hon'ble Bombay High Court in Civil Writ Petition No.11664 of 2015 in Devdatta Nikam V/s. State of Maharashtra and others vide an order dated 2nd December, 2015 directed us to reconsider the aforesaid application filed by MKVDC, Pune, seeking review of our Order dated 27th October, 2015 as well as dispose of the petition filed by Shri Devdatta Nikam on 5/11/2015 in Hon'ble Bombay High Court seeking review of the said Order of 27th October, 2015. The Hon'ble High Court modified and clarified its said Order dated2nd December, 2015 by further order dated 4th December, 2015 interalia allowing the Petitioner in Writ Petition No. 11664 of 2015 to raise a contention before us that one of the Members who had passed the original order dated 27th October, 2015 entertained a pecuniary bias and, therefore, he ought not to have decided the Case Nos. 5 & 6 of 2015. Accordingly, MKVDC and Shri Devadatta Nikam

were heard on their applications dated 7/12/2015 and 9/12/2015, and the same applications were disposed of by our Order dated 5th January, 2016 with the findings and directions contained therein. Subsequently, we passed an Order on 8th January, 2016 issuing a corrigendum to the said Order dated 5th January, 2016. In the Order dated 25th January 2016 in W.P. No. 846 of 2016 in Devdatta Nikam and State of Maharashtra and others, the Hon'ble Bombay High Court interalia directed that *"10. Notwithstanding this Order, it will be open for the second respondent to recall the impugned Order as well as the Order 27th October, 2015 and to pass a fresh order on the application dated 4th September, 2015 in accordance with law"*. As recorded in the Hon'ble Court's Order dated 9th February, 2016, we, through our Counsel, gave an assurance that we will recall our Orders 27th October, 2015, 5th Janury, 2016 and 8th January, 2016 and pass a fresh order after hearing the concerned parties.

3. In the above background, vide our notice dated 10th February, 2016, we called MKVDC,Pune, Shri. Rajendra Nagawade, Shri. Sriniwas Ghadge, Shri. Devdatta Nikam and various other concerned persons for a fresh hearing of the matter. The relevant contents of the aforesaid notice are extracted as follows :

सदर प्रकरणी मा. न्यायालयामध्ये दि. ०९.०२.२०१६ रोजी झालेल्या सुनावणी दरम्यान प्राधिकरणाने दि. २७.१०.२०१५ आणि दि. ०५.०१.२०१६ चे आदेश मागे घेत असल्याचे मा. न्यायालयास अवगत केले असून सदर प्रकरणावर नव्याने सुनावणी दि. १७ फेब्रुवारी, २०१६ रोजी दुपारी ३.०० वा. घेण्याचे कळविले आहे. तदनुसार ***बुधवार, दिनांक १७ फेब्रुवारी, २०१६ रोजी दुपारी ३.०० वा.*** *महाराष्ट्र जलसंपत्ती नियमन प्राधिकरण, मुंबई येथील कार्यालयात* ***जागतिक व्यापार केंद्र, सेंटर -१, ९ वा, मजला, कफ परेड, कुलाबा, मुंबई-४०० ००५*** *येथे आपल्या दि. ०४.०९.२०१५ च्या अर्जावर सुनावणी आयोजित केली आहे. सदर सुनावणीसाठी आपण उपस्थित रहावे.*

The English translation of the aforesaid abstract reads as follows:

During the hearing on 09/02/2016 in the Hon'ble High Court in this matter, the Authority has informed the Hon'ble Court that Orders dated 27/10/2015 & 05/01/2016 are being recalled and also informed that fresh hearing will be held on 17th February 2015 at 3:00 PM in this matter. Accordingly, a hearing is scheduled on Wednesday 17th February 2015 at 3:00 PM on your

application dated 04/09/2015 in office of Maharashtra Water Resources Regulatory Authority, Mumbai i.e. 9th floor, Center - 1, World Trade Center, Cuffe Parade, Colaba, Mumbai - 400 005. You are requested to remain present for this hearing.

2.0 We heard the parties on 17/02/2016. During the hearing, Smt. Aashatai Buchake, Opposition Leader, Pune Zilla Parishad submitted her application seeking intervention in the matter and the Authority accepted her application as an Intervenor.

a) The Petitioner's Advocate S. R. Palande and the following Intervenor & officers from the Respondent's side were present at the time of the hearing:-

   i) Shri. Devdatta Nikam through Adv. Samrat Shinde

   ii) Shri. R. B. Ghote, E.D., MKVDC, Pune

   iii) Shri Vikrant Chavan, Dy. Collector, Pune

   iv) Shri. R. D. Shinde, S.E. CADA, Pune

   v) Shri R. B. Galiyal, Under Secretary, WRD, Mantralaya, Mumbai

   vi) Shri S. N. Koli, E. E., Kukadi Project Division No. 2, Ahmednagar

   vii) Shri. G. B. Nannor, E.E, Kukadi Project Division 1, Narayangaon.

Consultant to the MWRRA

Dr. D. M. More, Technical Expert, Kothrud, Pune was also present.

2.1 During the hearing, we recalled our Orders dated 27/10/2015, 05/01/2016 & 08/01/2016 and clarified to the parties that we were holding a fresh hearing on the original application of Shri. Rajendra Shivajirao Nagawade and Shri. Shrinivas Baburao Ghadge dated 04/09/2015.

2.2 Advocate S. R. Palande on behalf of the Petitioners stated that:

i) There are in fact 74 K. T. weirs (and not 66 K.T. weirs) across the rivers between Kukadi complex and Ghod reservoir. Water account of all those is required to be considered.

ii) The K.T. weirs are not supposed to utilize water in Kharif season. Water planning of those weirs does not provide for that.

iii) Kukadi project is eight monthly project whereas Ghod is of perennial cropping pattern. No hot weather rotation is therefore warranted for Kukadi project.

iv) While working out utilizable percentage or any other parameter of reservoirs, it be calculated individually and not for the Kukadi complex as a whole.

v) It is because of obstruction of flow by the K. T. weirs and the storages in Kukadi project that the water availability in Ghod reservoir during 2015 is reduced considerably.

2.3 Adv. Samrat Shinde on behalf of Intervenor Shri. Devdatta Nikam

i) While issuing orders in respect of Ujjani (dated 26/10/2015) and Jayakwadi (dated 19/09/2014) equitable distribution of water during scarcity, the Authority has proposed it under Section 11(c) of the MWRRA Act. The Order for equitable distribution in Kukadi-Ghod case should also be required to be issued under that section only. The provisions under sub-sections 12(6) (a) to (c) are not substantive provisions.

ii) As the MWRRA (Allocation and Monitoring of Entitlements, Disputes & Appeals and other matters) Rules 2013 have been repealed, the definition of the terms scarcity, distress are no longer applicable. Rules being not in place, provision of the MWRRA Act are not applicable. The definition of scarcity given in the Maharashtra Groundwater Act, 1993 may be of worth consideration.

iii) The basis of imposition of the upper limit to the utilizable percentage of water during distress in the lower reservoir (in this case Ghod) is not clear.

iv) Kukadi complex reservoirs are never 100% full whereas the frequency of filling the Ghod reservoir 100% is quite high.

v) Section 12(6) of the Act, 2005 is merely a guiding principle for fixing quota at project level or sub-basin level. The Authority cannot give direction under that section.

vi) While releasing water for Ghod reservoir the population dependent on it and the actual area under cultivation should be considered.

vii) During 2014, 1.3 TMC water from dead storage of Ghod reservoir was utilized.

He has also filed a written submission in support of his review application, which we have also considered.

2.4 Mrs. Ashatai Buchake, Opposition Leader, Pune Zilla Parishad - Intervenor

The tribal belt around Manikdoh project of Kukadi complex is riddled with acute shortage of water during 2015-16. The drinking water issue of human as well as livestock has already assumed a serious proportion. The Authority is requested to pay visit to the area and get a glimpse of the situation first hand before issuing an order in this matter.

2.5 Shri. R. B. Ghote, E.D. MKVDC, Pune

i) Kukadi Complex, 66 K.T. weirs and the Ghod project are independent projects. Because of their individual existence, separate administrative approvals (AAs), different dependabilities of yield, varying water use and diverse cropping patterns, they can not be clubbed together. K.T. weirs are water conservation structures with 50% dependability. Therefore, while calculating utilizable percentage of water, K.T. weirs should not be considered along with Kukadi Complex.

ii) It is clear from the following calculations that the utilizable percentage of water even in good years with full storage as on the 15th of October in both scenarios - Full kharif use and Nil kharif use - in case of Ghod

reservoir falls short of 60% - the prescribed upper limit for making equitable distribution necessary during that year:

Full Kharif use + Full storage as on 15th October at Kukadi Complex	= [864.396 + 78.72 X 0.4 + 328.83] / 1082.27 = 113 %
Full Kharif use + Full storage as on 15th October at Ghod reservoir	= [154.80 + (8.49 + 9.06) X 0.4 +3.417] / 294.48 = 56 %
Nill Kharif use + Full storage as on 15th October at Kukadi Complex	= 864.396 / 1082.27 = 80 %
Nill Kharif use + Full storage as on 15th October at Ghod reservoir	= 154.80 / 294.48 = 53%

The supplementary condition, namely the difference between utilizable percentage of Kukadi complex and that of Ghod being more than 15%, also gets fulfilled. In short, in good year also, Ghod project is in distress. This makes the 60% utilizable water criteria of no worth. In view of this, an expert committee needs to be appointed for study and evolving suitable criteria for equitable distribution.

iii) There was a shortage of drinking water during August 2015. This led to a demand from the Collector, Ahmednagar to have a rotation in Kukadi command, which materialized in practice.

iv) Yedgaon is not a main dam in the Kukadi complex – it is a pick-up weir. While transferring water from Dimbhe to Yedgaon, heavy conveyance losses occur.

v) Kukadi Complex reservoirs were never filled 100% whereas Ghod was filled to full capacity 23 times out of last 32 years. It can safely be concluded that impounding of Ghod is in no way affected by Kukadi storages.

vi) It has been forbidden to withdraw water from dead storage for irrigation either from Ghod or Kukadi Complex reservoirs. It has been observed that in bad years, it becomes necessary to utilize water from dead storage of Pimpalgaon-Joge reservoir of Kukadi Complex to meet drinking water needs. This stipulation mentioned above will prevent letting water into Sina and Visapur tanks during periods of scarcity in Kharif.

vii) Per hectare utilisation of water works out as follows:

Project	Command Area (ha)	Gross Annual Utilisation (Mm^3)	Per ha Utilisation (m^3/ha)
Kukadi Complex	1,46,000	1082.27	7,410
Ghod	20,500	294.48	14,300

Ghod project has almost double per hectare utilisation of water when compared to Kukadi Complex. The diversion of water from Kukadi to Ghod will further reduce the per hectare availability of Kukadi Complex.

viii) Total drinking water requirement from 01/10/2015 to 15/07/2016 in Kukadi area is 70.76 Mm^3. Out of this 50% requirement was met through one Rabi rotation that was catered to Kukadi command. To cater to the remaining 50% requirement of drinking water, one hot weather rotation is proposed. Storage available in Kukadi Complex reservoirs as on 15/02/2016 was 139.46 Mm^3. Losses on account of evaporation, leakages and use of reservoir lifts upto 15/07/2016 is estimated to be 52.60 Mm^3. The planned rotation for drinking water will require 127.13 Mm^3 necessitating use of dead storage water of Kukadi Complex. The 66 K. T. weirs have combined storage of 22.70 Mm^3 water as on 15/02/2016 which will cater to drinking water demand of adjoining area. In Ghod command, one Rabi rotation has already been catered and one hot weather rotation for drinking water can be managed with the available storage as on 15/02/2016 without resorting to dead storage.

ix) The quantum of water available above the spillway crest of Kukadi Complex was 5.76 Mm^3 as on 15/02/2016. If at all that much water is released to Ghod, it will be of little use there. In view of this, it is not desirable to release water from Kukadi Complex to Ghod.

x) The live storage status as on 15/02/2016 is as follows:

Kukadi Complex	430.21 Mm^3 (49.77%)
Ghod Project	83.31 Mm^3 (53.82%)

As the % of storage in Kukadi Complex is less than that of Ghod, any diversion from Kukadi to Ghod will add severity of drought in Pune, Ahmednagar and Solapur districts.

2.6 Resident Deputy Collectors (RDCs) Ahmednagar & Pune

Both RDCs submitted that they will send their drinking water requirements to the ED, MKVDC, Pune.

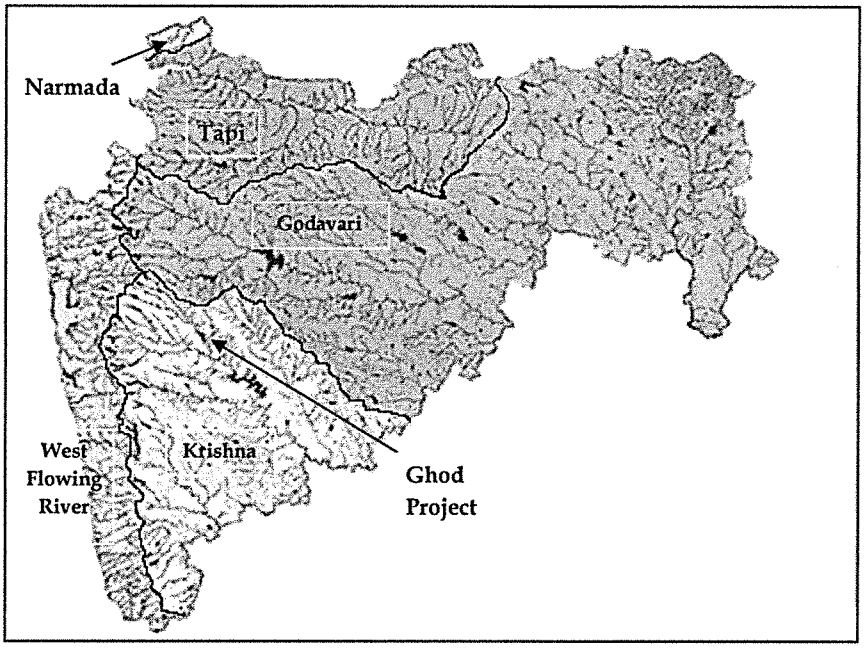
2.7 Shri. Devdatta Nikam - Intervenor

Kukadi project rehabilitation works of project affected persons (PAPs) are still incomplete. The construction works of canals of Dimbhe and Wadaj are still going on. There are local drinking water schemes operational through the K.T. weirs constructed between Kukadi Complex and Ghod dam. Also as to how much water will reach Ghod reservoir is a matter of serious consideration.

3.0 Before dealing with the matters in question, it would be useful to give an overview of projects in the Ghod sub-basin for a proper appreciation of the scenario. The source for this is the information submitted by Superintending Engineer and Administrator, CADA, Pune.

3.1 Maharashtra State is geographically divided into 5 river basins, namely the Godavari, Krishna, Tapi, Narmada and the West flowing rivers of Konkan. A river basin is a natural hydrological unit within the territorial limits of which all activities relating to water are interdependent. A Sub-basin is a hydrologic sub-unit of a river basin within the State.

A map showing the five river basins of Maharashtra



The Ghod River is the major tributary of the Bhima River which is a part of the Krishna basin. The Ghod River originates in the Western Sahyadri Ghats at Gavadewadi in Ambegaon Taluka of Pune District at about RL 1000 m. Its tributaries are the Kukadi, Mina and Aar (Pushpavati) which also originate in the Western Sahyadri Ghats. The places of origin of all these rivers lie in a good rainfall region. The length of the Ghod River upto the Ghod dam is 170 km. It joins the Bhima River near Daund in Pune District. This sub-basin has an area of about 3626 square kilometer and is spread over Ahmednagar and Pune Districts. Ghod Project has been planned to give benefits to drought prone areas of Ahmednagar District. The project is a multipurpose project, that is, its water is used for drinking and irrigation. Presently, 1.28 lakh populations is dependent on the Ghod water reservoir for drinking purpose.

The State Water Policy formulated by the Government of Maharashtra in 2003 envisages that the water resources of the State shall be planned, developed and managed adopting the river basin and the sub-basin as the unit. The policy states that the distress in water availability during deficit periods shall be shared equitably amongst different sectors of water use and also amongst upstream and downstream reservoirs.

3.2 The schematic diagram of the Ghod sub-basin which is a part of the Bhima sub-basin is as below:

The Ghod sub-basin consists of the Ghod Project on the Ghod River and the Kukadi Project Complex. In addition to these there are 66 K. T. weirs on the rivers upstream of Ghod reservoir across which Kukadi dams are sited.

A) The Ghod project has been initially Administratively Approved on 12/07/1954. The construction work of this project started in 1954 and was completed in 1965. The project provides irrigation to a scarcity area of 20500 hectares in Shirur Taluka of Pune district and Shrigonda & Karjat talukas of Ahmednagar district with perennials limited to 1000 ha as approved by the Government on 17/05/1985. The annual utilization in thousand million cubic feet (TMC) is as below:

Table - 1

Use	Annual Utilisation in TMC
Irrigation	9.78 (Kharif 3.70, Rabi 4.08, Hot Weather 2.0)
Drinking	0.30
Industrial	0.32
Total	**10.40**

B) The Kukadi Project is Administratively Approved on 08/11/1966. The project is an integrated project comprising the five dams (Dimbhe on Ghod River, Wadaj on Mina River, Manikdoh and Yedgaon on Kukadi River and Pimpalgaon Joge on Aar (Pushpavati) River). The project provides irrigation to a scarcity area of 1.46 lakh ha in Pune, Ahmednagar & Solapur districts with eight monthly cropping pattern i.e. irrigation only to Kharif and Rabi crops. The annual utilization of water in Kukadi complex is as below:

Table - 2

Use	Annual Utilisation in TMC
Irrigation	30.855 (Kharif 11.61, Rabi 18.36, Hot Weather 0.88)
Drinking & Industrial	2.780
Transit losses for release to Yedgaon	1.100
Evaporation Loss	3.485
Total	**38.220**

C) The K T weirs (66 Nos) - The water use planning of 66 K. T. weirs upstream of the Ghod reservoir provides 90.20 Mm^3 (3.18 TMC) water for Rabi crops only and there is no provision for Kharif irrigation.

4.0 Analysis:

The Petitioners have made their application before MWRRA seeking equitable distribution of water in Ghod sub-basin as per section 12 (6) (c) of MWRRA Act. As per the Petitioners, the beneficiaries of the Ghod command are adversely affected because of the obstruction to the flow of water in 66 K. T. weirs on the upstream side of the Ghod Project. Therefore, water from dams in Kukadi complex which are located on the upstream side of Ghod Project should be released into Ghod reservoir. In the first week of September 2015, there was no live storage in the Ghod reservoir.

4.1 As can be seen from Para 3.2 (A), the water planning of Ghod project provides for 3.70 TMC of Kharif use, Rabi 4.08 TMC & Hot Weather 2.0 TMC. The Petitioners have requested equitable distribution of water as provided in the MWRRA Act. The command of Ghod Project has been delineated and WUAs have been constituted under MMISF Act 2005. These WUAs are the entitlement holders for whom quotas are being fixed. Hence the provision of section 12 (6) (c) is applicable to the Ghod Project. However for operation of Section 12 (6) (c), the requirements in this section have to be first fulfilled. The Section 12 (6) (c) reads as below:

12 (6) The Authority shall fix the Quota at basin-level, sub-basin level or project level on the basis of the following principles:-

(a……..;

(b) ……;

(c) in order to share the distress in the river-basin or sub-basin equitably, the water stored in the Reservoir, in the basin or sub-basin, as the case may be, shall be controlled by the end of October every year in such a way that, the percentage of utilizable water, including Kharif use, shall, for all Reservoirs approx be the same

In the above Section, the percentage of utilizable water means the ratio of available water as on 15th October in the reservoir including Kharif use

already made to the designed water use as planned in the latest approved water planning of the project.

As regards the term "distress" in the above section, the Authority would need to conceptualize the meaning of distress. The basic needs of the drinking water, food crop requirement in Kharif and Rabi, and committed industrial use will have to kept in view, while distress is shared by all reservoirs in the sub-basin.

As per the provision in Para 2.8 of the State Water Policy on drought management, the distress in a sub basin/ basin is to be shared between upstream users & downstream users within all sectors of water. The equitable distribution is therefore necessary to give justice to all sectors of water use in the beneficiary area.

For practical considerations, there should be a cutoff point to the utilizable percentage of water during a distress condition in the lower reservoir, below which equitable distribution would be triggered. An appropriate cut in the drinking and industrial requirement as per Para 2.8 of the State Water Policy is to be applied while sharing the deficit in water availability in the sub-basin.

The utilisable percentage is the percentage of use proposed to be made (and already made i.e. Kharif use) to the annual designed water use.

The annual designed water use of the Ghod Project is as under:

Table - 3

	TMC
Drinking	0.3
Industrial	0.32
Irrigation	
a. Kharif	3.7
b. Rabi (4 rotations)	4.08
c. Hot Weather	2.00
Total for irrigation	9.78
Grand Total	**10.40**

The cutoff point for distress condition can be worked out in the following way for the Ghod Reservoir.

Table - 4

(1) Use proposed to be made in the Rabi season (and already made in the Kharif season) can be calculated proposing a 20% cut in drinking and industrial use plus a 50% cut in Rabi use and 100% cut in Hot Weather use.	(0.3*0.8)+(0.32*0.8)+[3.7+(4.08*0.50)+2*0] =6.236 TMC Utilizable percentage with 2 Rabi rotations comes to - 6.236/10.4 =0.60 i.e. 60%

During a distress situation, in order for the crops to survive, a maximum of two Rabi rotations would be adequate. From the above calculation, the cutoff point for releasing water from the upstream storages to downstream storage works out to be 60% of the utilizable storage in the lower reservoir (as on 15th October).

Considering that there will be conveyance losses during transit, we feel that in order to trigger equitable distribution, the difference in the utilizable storages upstream and downstream should not be below 15%.

It will be logical to regulate the upper reservoirs as per the above guiding principles after taking review of the storage position in the upstream Kukadi complex and 66 K T weirs, storage in the Ghod reservoir so that the equitable distribution of the available water among the upstream and the downstream reservoirs is achieved by the end of October every year. While doing this, the drinking water requirement up to 15 July of the next year for the sub-basin as a whole is to be first ensured.

If any reservoir on the upstream side is short of water to meet its own drinking water needs, at least two crop rotations (including Kharif) and committed industrial use as mentioned above, no release of water from that reservoir shall be considered.

However, it should also be ensured that there is no drawal from the dead storage for irrigation purposes from either the upstream reservoirs or the downstream reservoirs.

4.2 As stated in Para 3.2 (B), the Kukadi complex was approved on 8/11/1966 as an integrated project comprising of 5 reservoirs. Hence, it will not be correct to treat these reservoirs as separate projects.

4.3 As per the administratively approved water planning of 66 K. T. weirs furnished by SE, CADA, Pune there is no provision for Kharif use from these K. T. weirs. There is only a provision for Rabi use. Therefore, storing of water in these K. T. weirs by the insertion of needles is not to be carried out until the end of the Kharif season. K. T. weirs are planned to be filled from the run-off of free catchment below Kukadi complex after the end of the Kharif season and not planned to be filled from Kukadi releases.

It is observed from the Table - 6 that there is a Kharif use of about 17.338 Mm^3 on 66 K. T. weirs during the monsoon 2015. As per the project planning, this is not expected to be done. Water is not to be used from K. T. weirs during the Kharif season. It is also observed from the same table that there was no water for Kharif use in the Ghod Project command and there was no live storage at the time of submission of the first application by the Petitioner.

As per the administratively approved water planning of Ghod Project furnished by SE, CADA, Pune there is a provision for Kharif, Rabi and Hot Weather uses. As per the information provided by SE, CADA, Pune water available at 75% dependable yield is 51.30 TMC at Ghod Project site. The allocated share of Ghod project is 10.40 TMC. The permissible use for Kukadi complex is 38.90 TMC whereas that for other projects in Ghod sub-basin is 2 TMC. The planned water use in 66 K. T. weirs is 3.18 TMC and that of Chilhewadi is 0.87 TMC. In addition there may be some local sector water conservation works which are not accounted for in the above calculations. It will be seen from this that by constructing 66 K. T. weirs and Chilhewadi project upstream of Ghod, the availability of water at the Ghod site is reduced.

The net water available at Ghod Project site works out to be 51.30 - (38.90 + 3.18 + 0.87) = 8.35 TMC. The conclusion is that of water availability at Ghod project site is affected due to the construction of K. T. weirs.

4.4 In exceptional circumstances, the drawal from dead storage, exclusively for drinking purposes, preferably through closed conduit, may be resorted to with the permission of the competent authority.

4.5 According to the contention advanced before us one of the issues would be as to whether the percentage of storage in Kukadi project is less than the percentage of storage in Ghod project and, if so, whether diverting of water from Kukadi complex to Ghod project may not be appropriate. As per clause 12 (6) (c) of MWRRA Act 2005, the percentages are to be worked out with respect to the utilizable water, including the Kharif uses, and hence the conclusion drawn by MKVDC is not tenable.

4.6 It was contended that the diversion of water from Kukadi to Ghod will add to the severity of drought in drought prone areas of Ahmednagar and Solapur districts. We are of the view that the transfer of water from upstream to downstream is governed by the equity principle as laid down in Section 12(6) (c) of the MWRRA Act, 2005.

4.7 It was also contended that higher water use in Ghod command (14,300 cum /ha) and relatively lower water use in Kukadi command (7410 cum / ha) as also the effect of Hot Weather use of water should also be looked into while carrying out equitable distribution. In Section 12 (6) (c) of MWRRA Act, there is no criteria related to quantity of water use per ha for deciding equitable distribution of water.

4.8 We have also examined the issue as to whether the last year's (2014-15) 2.4 TMC carry over water in Kukadi complex, which has been utilised this year should be considered. We are of the view that carry over is a part of live storage. It has to be considered as utilisation of the year as per provision in Section 12 (6) (c) of the MWRRA Act.

4.9 We have also examined the issue as to whether K. T. weirs upstream of Ghod dam be considered as part of Kukadi complex. We are of the view that the live storage impounded by the series of K. T. weirs is a part of the utilizable water of the Kukadi Complex.

4.10 As to whether even in good years when Ghod project is 100% full on 15th October, the equitable distribution will have to be carried out as per the criteria for upper limit, we are of the view that there is an error in the calculation presented by ED, MKVDC Pune. In case of full Kharif use in

Ghod Project, designed Kharif use of irrigation has been taken by him in TMC while all other figures are in Mm^3. When due correction is made, the percentage works out to be 88%, as shown in the following table.

Table - 5

Full Kharif use + Full Storage as on 15th October at Ghod reservoir	= [154.80 + (8.49 + 9.06) X 0.4 +96.75] / 294.48 = 88%
Nill Kharif use + Full Storage as on 15th October at Ghod reservoir	= 154.80 / 294.48 = 53%

96.75 Mm^3 is equivalent to 3.417 TMC which is the Kharif irrigation requirement of Ghod project.

The contention of the MKVDC is therefore incorrect.

5.0 Operating directions for equitable distribution in Ghod sub-basin:

The Tables below show the values of percentages of utilizable water both in respect of Kukdi Complex (including 66 KT weirs) and Ghod reservoir downstream. The information as was received from SE, CADA, Pune on 19/10/2015 regarding storage position as on 15/10/2015 for Kukadi Complex, 66 K T weirs and Ghod Project is given in table below:

Table - 6

(All Mm^3)

Storage	Designed live storage	Live storage as on 15.10.15	Kharif use (2015)		Drinking Water Requirement Dependent on storage / canal from 1.10.15 to 15.7.16		Total evapo-ration loss (1.10.15 to 15.7.16)	Convey-ance loss, if any (1.10.15 to 15.7.16)	Water use [Col 4a+4b+5 +6]	Balance storage [Col 2b-7]	Total Rabi require-ment as per project planning
			Drink-ing	Irriga-tion	Drinking	Industry					
1	2a	2b	3(a)	3(b)	4a	4b	5	6	7	8	9
A) Kukadi Complex	864.396	430.206	60.930	72.840	70.761	2.233	78.250	128.494	279.738	150.468	519.530
B) 66 K T Weirs	69.966	46.280	0.000	17.338	1.290	0.172	10.495	0.000	11.957	34.323	90.200
Total (A+B)	934.362	476.486	60.930	90.178	72.051	2.405	88.745	128.494	291.695	184.791	609.730
Ghod	154.800	83.310	3.040	1.750	7.673	3.496	23.210	0.000	34.379	48.931	115.460

The utilizable water in case of Ghod project was as follows:

Utilizable water = Live storage as on 15/10/2015 + Kharif use in 2015

= 83.31 + (3.04 +1.75) = 88.10 Mm^3

Available percentage of utilizable water including Kharif use as on 15/10/2015 in upstream reservoir complex as well as downstream reservoir was as under;

Table - 7

Storages	Available % of utilizable water including Kharif use as on 15/10/2015
Upstream : Kukadi Complex and 66 K T weirs	(476.486 + 60.93+ 90.178) / (1082.27# + 91.42@)= **53.47%**
Downstream : Ghod Project	(83.31 + 3.04 + 1.75) / 294.48## = **29.92%**

The design water use is as per the project planning.

Table - 8

 # Gross annual utilization of Kukadi Project (Mm³)

Irrigation Requirement	873.72
Evaporation losses at storages	98.68
Conveyance losses for release to Yedgaon	31.15
Non-irrigation use	78.72
Total	**1082.27**

Table - 9

@Gross annual utilization of 66 KT Weirs (Mm³)

Rabi use	90.20
Drinking water use	1.22
Total	**91.42**

Table - 10

Gross annual utilization of Ghod project (Mm³)

Irrigation	232.85
Evaporation losses	44.08
Drinking	8.49
Industrial	9.06
Total	**294.48**

The percentage of utilizable water available in Ghod project was 29.92% as on 15th October, that is less than 60%, as prescribed above and also the difference between the utilizable percentage between upstream and downstream reservoirs was more than 15%. Hence, while fixing the quota for Ghod reservoir, equitable distribution is warranted by virtue of Section 12 (6) (c) of the MWRRA Act, 2005.

As per provision of Section 12 (6) (c), the percentage of utilizable water has to be approximately the same by the end of October. It was therefore required at that time to release 45 Mm^3 (1.6 TMC) water from the Kukadi Complex and 66 K T weirs to bring Ghod reservoir to 83.31 + 0.75 x 45 = 117.06 Mm^3 (4.13 TMC) storage mark after considering transmission losses of about 25%. This would have resulted in the percentage of utilizable water in Kukadi Complex and the 66 K T weirs to be about 50% and that in Ghod reservoir to be about 42%, which would have been a reasonably approximate equitable distribution as envisaged in Section 12 (6) (c).

As per the Authority's Order dated 05/01/2016 issued in this matter, considering the storages available in upstream reservoirs of Ghod Project, the MKVDC was directed to release 24 Mm^3 water. However, MKVDC Pune released 6.67 Mm^3 water till 20/01/2016. The Authority as stated earlier, has recalled the Order dated 05/01/2016.

5.1 The petitioner prayed that the Authority should fix the quota, in this connection we would like to refer the section 11(a) of the MWRRA (Amendment and Continuance) Act, 2011 reproduced as below;

> *(a) to determine the criteria for the distribution of Entitlements by the River Basin Agencies, within each Category of Use, on such terms & conditions as may be prescribed, after sectoral apportionment is made under section 16 A;*

As per this section, the Authority determines the criteria based on which the River Basin Agencies distributes the entitlements for each categories of use. Based on the quantity of water available in the storages after the releases are effected, the River Basin Agencies determine the quota i.e. quantity of water to be made available to each entitlement holder.

5.2 However, whatever is now to be released, will have to be as per the current available storage. The position as on 15/02/2016 is given below:

Table - 11

(All in Mm^3)

Name of Dam	Live Storage as on 15/10/2015			Live Storage as on 15/02/2016		
	Below spillway crest	Above spillway crest	Total	Below spillway crest	Above spillway crest	Total
1	2a	2b	2	3a	3b	3
Dimbhe	219.38	0.00	219.38	94.69	0.00	94.69
Wadaj	14.37	18.85	33.22	13.58	0.00	13.58
Manikdoh	56.72	0.00	56.72	7.28	0.00	7.28
Pimpalgaon Joge	16.79	24.93	41.72	9.66	0.00	9.66
Yedgaon	8.49	70.78	79.28	8.49	5.76	14.25
Total	**315.75**	**114.57**	**430.32**	**133.70**	**5.76**	**139.46**

It will be seen that the water available now, above the spillway crest is only 5.76 Mm^3 as on 15/02/2016. The Rabi requirement for one rotation for Ghod Project is 115.46 Mm^3 / 4 = 28.865 Mm^3, but at present the Rabi season is near its end. Even if it is directed to release water, the conveyance and seepage losses would be high considering the higher temperatures now. Thus it is not worthwhile to release any water from the Kukadi complex at this stage. However, in future years much will depend upon the storage position of both upstream as well as downstream reservoirs which will in turn depend upon the rainfall in those years. We direct MKVDC to work out the quantum of water for release from upstream dams, if at all required, in the next year, based on the guiding principles contained herein. Accordingly, MKVDC shall submit a report immediately after the 15th October to us each year for passing necessary orders.

5.0 DETERMINATIONS:

In view of the above background, it is hereby directed that:

a) An approximate equitable distribution has to be resorted to in the sub-basin by the end of October each year when the lower reservoir has utilizable water storage (including Kharif use) of less than 60 % of the

designed annual water use. However, if the actual difference between the percentage of utilizable water in the upstream complex and the lower reservoir is less than 15 %, then it will not be necessary to effect any redistribution.

b) As the releasable storage available in the reservoirs of Kukadi Complex as on 15/02/2016 was 5.76 Mm^3 only, and also in view of the conveyance losses, it is not practicable to release any water into the Ghod reservoir at this juncture, over and above what has been already released.

c) The State Government should constitute a Study Group to recommend the principles of equitable distribution for each sub-basin.

With the above findings and directions, the petitions and the applications stand disposed of.

Sd/-

(Ravi B Budhiraja)
Chiarman

Sd/-

(Chitkala Zutshi)
Member (Economy)

(Dr. Suresh Kulkarni)
Secretary

M. W. R. R. A. MUMBAI