

Minutes of the 10th meeting of Task Force for Interlinking of Rivers held on 5th October, 2018 at New Delhi

The Tenth Meeting of Task Force for Interlinking of Rivers was held on 5th October, 2018 at New Delhi under the chairmanship of Shri B. N. Navalawala, Chairman, Task Force & Chief Advisor, Ministry of Water Resources, River Development and Ganga Rejuvenation. List of the participants is at **Annex-I**.

At the outset, Chairman, Task Force for Interlinking of Rivers extended warm welcome to the participants attending the meeting and requested Director General, NWDA to take up the Agenda items.

Item 10.1: Confirmation of minutes of 9th meeting of Task Force for Interlinking of Rivers held on 30th May, 2018 at New Delhi

Director General, NWDA informed that the minutes of ninth meeting of the Task Force for Interlinking of Rivers (TF-ILR) held on 30.05.2018 at New Delhi were circulated to all the members vide letter dated 26.06.2018. The Govt. of Kerala vide their letter dated 17.08.2018 sent their comments on the minutes, which have been duly replied by NWDA vide letter dated 19.09.2018. No comments have been received from any of the other members, therefore, the Minutes of ninth meeting of the Task Force for Interlinking of Rivers were confirmed as circulated.

Item 10.2: Interim Report of the Financial Sub Committee/ Group:

Director General, NWDA informed that the Task Force for Interlinking of Rivers in its 6th meeting held on 13th February, 2017 decided to constitute a Group on Financial Aspects headed by Dr. Prodipto Ghosh, Former Secretary to the Govt. of India and Member of the Task Force. Accordingly, MoWR, RD & GR vide letter dated 12.09.2017 constituted a "Group on Financial Aspects under Task Force for Interlinking of Rivers" headed by Dr. Prodipto Ghosh to look into the financial aspects of various inter-basin water transfer links identified by NWDA and to suggest funding pattern for implementation of these links. The Task Force in its 9th meeting held on 30.05.2018 requested Dr. Prodipto Ghosh, Chairman of the Finance Group to submit the Interim Report of the Group by 31st July, 2018. Accordingly, the Group has finalized its Interim Report during the meeting held on 25.07.2018 and submitted the same to the Chairman, Task Force vide letter dated 07.08.2018. The report was placed for consideration of the Task Force during the meeting.

Dr. Prodipto Ghosh made a presentation (**Annex-II**) on the report of Finance Group. The Key features of the report are:

- (i) All the Interlinking of Rivers Projects be included in the list of National Projects with 90% (Centre): 10% (States) funding pattern.
- (ii) With a view to elicit the interest of domestic and international financial institutions, funding of ILR projects from Government, i.e., from Govt. of India and State Governments has been kept as 15% of the total Estimated Cost.
- (iii) The total cost of the ILR projects of NPP has been estimated as Rs. 8.44 lakh crore. Out of which Rs. 6.39 lakh crore is for irrigation development, Rs. 2.02 lakh crore for hydro-power development and Rs. 0.03 lakh crore for exclusive water supply project of Damanganga-Pinjal link.
- (iv) The 29 ILR projects of NPP are proposed to be implemented over a period of 30 years from 2020-21 to 2049-50.
- (v) Four projects: Ken – Betwa, Damanganga – Pinjal, Par – Tapi – Narmada and Godavari (Akinepalli) – Cauvery link projects have been prioritized and planned to be implemented during the first ten year period, 2020-2030. The total cost of these four projects has been estimated as Rs. 93194 crore.
- (vi) Phasing of cost of four prioritised link projects Ken-Betwa Link Project, Par-Tapi-Narmada Link Project, Damanganga-Pinjal Link Project and Godavari-Cauvery Link Project have been made (Rs. 93193.94Crore) within a period of 10 years of 2020-30.
- (vii) Given the mandate of multilateral and bilateral financial institutions for funding climate change and adaptation and mitigation projects, funding for the ILR from these institutions may be sought on the basis of the climate change adaptation potential of ILR established through published research and the mandate in the action plan on water resources in National Action Plan for Climate Change (NAPCC). It will be advisable in this context for the Govt. to include the ILR programme in India's Nationally Determinate Contribution (NDC) under the Paris Agreement.

- (viii) In order to secure external funding for the ILR projects from international financial institutions – MFIs, Bilaterals, and private funds such as pension funds, enhanced due diligence for each sub-project in terms of due diligence requirements of MFIs would need to be undertaken. This would include establishing the climate change adaptation potential of each sub-project/ Group by detailed modeling exercises.
- (ix) In order to advance understanding of the overall economic, environmental, and social benefits , including enhancing the sustainability of water resources management, as well as to establish the potential to address climate change adaptation of the entire ILR programme, it would be worthwhile to conduct a detailed macro-level modeling study by professionally competent Indian institution(s).
- (x) The key to eliciting and sustaining the interest of financial institutions, both domestic and external, in financing the ILR programme is to clearly identify the sources and means of cost-recovery. This aspect was also highlighted by the earlier Task Force on ILR headed by Shri Suresh Prabhu. However, in this Interim Report, this aspect has not been dealt with.

Chairman, Task Force observed that the land acquisition cost will be increased further and due care needs to be taken for R&R package for the people whose lands are acquired. The present cost of land acquisition is not adequate. Shri M. Gopalakrishnan, Member of the Task Force stated that ILR project will enhance GDP. Chairman, Task Force mentioned that there will be positive impact on the climate due to Interlinking of Rivers and this shall be highlighted. Climate Change adaptation potential of ILR should be established through published research.

Regarding institutional arrangements for implementation of ILR projects, Shri S. Masood Husain, Chairman, CWC mentioned that legal aspects covered in the Legal Group set up on the direction of Task Force has submitted its report to the Task Force. Legal Group has dealt the existing constitutional provisions and suggested ways and means to implement the ILR programme. The suggestion given by the Legal Group will be immensely useful.

Chairman, Task Force appreciated approach of the Finance Group in addressing the ToRs of the group and also the excellent work done. He emphasised upon the need for considering the Sovereign Funding from the countries like South Korea (KRC Model) as suggested in the report. To

accelerate the process as a first step the funds for execution of the three prioritised link projects namely Ken-Betwa Link Project, Par-Tapi-Narmada Link Project and Damanganga-Pinjal Link Project be arranged internally by the Government of India and the State governments through budgetary support or domestic borrowing from banks and other financial institutions. This will develop confidence among the international funding institutions and will encourage them to provide funds for execution of the other ILR projects. The Task Force accepted the Interim Report of the Finance Group and decided to submit this report alongwith the Action Points to the Hon'ble Minister (WR, RD & GR).

Item 10.3: Any other Item with the permission of the Chair

Task Force decided to submit the report of "Group on legal aspects under Task Force for Interlinking of Rivers" to the Ministry of WR, RD & GR.

Meeting ended with the vote of thanks to the chair.

Annex-I

List of Members, Special Invitees and participants of the Tenth Meeting of the Task Force for Interlinking of Rivers held on 05.10.2018 at New Delhi.

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|----|--|------------------|
| 1. | Shri B.N. Navalawala,
Chief Advisor, MoWR, RD & GR | Chairman |
| 2. | Shri S. Masood Husain
Chairman, CWC, New Delhi | Member |
| 3. | Ms. T. Rajeshwari,
Additional Secretary,
MoWR, RD & GR, New Delhi | Member |
| 4. | Dr. Prodipto Ghosh,
Former Secretary, MoEF& CC
Distinguished Fellow, TERI, New Delhi | Member |
| 5. | Shri M. Gopalakrishnan,
Former Secretary General, ICID | Member |
| 6. | Shri Sriram Vedire,
Advisor, Ministry of WR, RD & GR,
New Delhi | Member |
| 7. | Shri M. K. Srinivas,
Director General, NWDA, New Delhi | Member-Secretary |

Special Invitee

8. Shri M.K. Sinha,
Assessor, KWDT and Former Chief Engineer, CWC

Officer from MoWR, RD & GR

9. Shri Virendra Sharma,
Senior Joint Commissioner (BM)

NWDA Officers

10. Shri K.P. Gupta,
Director (Tech.), New Delhi
11. Shri Anil Kumar Jain,
Deputy Director, New Delhi
12. Shri Nizam Ali,
Consultant, New Delhi

Annex-II

Interim Report of the Finance Subgroup under the Task Force on Interlinking of Rivers

Prodipto Ghosh, Ph.D.

Chair, Finance Subgroup

Former Secretary to Govt. of India

05 October 2018

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Conceptual Basis of ILR

- Diversion of water from water surplus basins (Himalayan) to water deficit basins/areas (Peninsular) will enable utilization of the surplus water which otherwise flows into the sea unutilised.
- Adaptation to likely adverse impact of climate change will require short term and long term measures, including Inter-Basin Water Transfers (IBWT).
- The Plan of Action of the National Water Mission under the National Action Plan on Climate Change (2008) identifies as one of its Strategies: *“A(iv) Encouraging water transfers from surplus to deficit areas, with the sub-strategy of expediting planning and implementation of schemes for inter-basin transfers.”*

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Constitution, Membership, and ToRs of Finance Subgroup

- The Task Force on ILR in its 6th meeting held on 13th February, 2017 decided to constitute a Finance Sub-group to look into the financial aspects of various inter basin water transfer proposals and suggest appropriate funding pattern.
- Accordingly, the Ministry of Water Resources, RD & GR vide OM dated 12.09.2017 (Annex – 1.3.1) constituted the Group on Financial Aspects under the Task Force for Interlinking of Rivers.
- The (extended) the tenure of the Financial Group was upto 31st July, 2018. It held 13 meetings in all till submission of the Interim Report on 03 August 2018.
- The composition and terms of reference (ToR) of the Finance subgroup are as follows:

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Composition of Finance Subgroup

1	Dr. Prodipto Ghosh, Former Secretary to Govt. of India, and Member of Task Force for ILR	Chairman
2	Shri A.B. Pandya, Former Chairman, CWC New Delhi	Member
3	Shri Rana Kapoor, Managing Director & CEO Yes Bank Ltd., 9 th Floor, Nehru Centre, Worli, Mumbai	Member
4	Shri Dhiraj Nayyar, OSD (Economics, Finance & Commerce Cell), NITI Aayog. Succeeded by Shri Avinash Mishra, joint Advisor (WR&LR), NITI Aayog vide NITI Aayog letter dated 12.04.2018 (Annex – 1.3.3).	Member
5	Shri M.K. Mittal, Director (Finance), NHPC, NHPC Complex, Sector – 33, Faridabad.	Member
6	Shri H. Satish Rao, Retired Director General, ADB, Manila	Member
7	Shri Navin Kumar, Chief Engineer (IMO), CWC, Sewa Bhawan, R.K. Puram, New Delhi	Member
8	Shri R K Jain, Chief Engineer (HQ), NWDA, New Delhi	Member
9	Shri K.P. Gupta, Director (Tech.), NWDA, New Delhi	Member Secretary

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Special Invitees	
1	Shri Jagmohan Gupta, JS&FA, MoWR, RD & GR, New Delhi
2	Shri R.K. Pachauri, Chief Engineer (PPO), CWC, New Delhi.
3	Dr. Dipak Das Gupta, Former Principal Economic Advisor in the Ministry of Finance and India's representative on the Board of Green Climate Fund.
4	Shri M.K. Sinha, Assessor, Krishna Water Dispute Tribunal and Former Chief Engineer, CWC, New Delhi
5	Prof. A.K. Gosain, Department of Civil Engineering, IIT, Delhi
6	Dr. Vankina Tulsidhar, Retired Advisor ADB, Manila, Hyderabad

ToRs of Finance Subgroup

1. To study the documents related with funding of ILR projects prepared by the earlier Task Force on ILR set up by the Government of India in the year 2002:
2. To suggest funding mechanism for each link project:
3. To study the option(s) of declaring some of the IBWT links of NPP as 'National Project' on the pattern of Ken-Betwa link:
4. To study sharing of cost of link projects by respective beneficiary States and suggest the basis/formula to determine the cost sharing, and
5. Any other matter relevant to the above aspects.

Action Plan of the Finance Sub-group:

Work Plan of Finance Subgroup and Progress

Task No.	Theme of Task	Anchor (s) for Theme	Relates to TOR(s) No(s)	Remarks
1	Review of earlier Task Force recommendations on financial aspects	Chair	1	Completed
2	Update cost of each link and total for ILR at 2015 prices	NWDA + Shri M.K. Sinha	2,3,4	Completed
3	Projections of public finance likely to be available for ILR upto 2050	NITI Aayog	2,3,4	Amalgamated with Task No. 3 Completed
4	Projections of private finance from Indian Financial institutions likely to be available for ILR upto 2050	Yes Bank + Shri Dipak Dasgupta	2,4	Completed
5	Projections of funding for ILR upto 2050 from multilateral financial institutions (WB, ADB, GCF, BRICS Bank, GCF, etc.)	NITI Aayog/Mr. Satish Rao + Shri Dipak Dasgupta	2,4	Completed
6	Assessment of policy constraints on external (commercial) borrowing	Sh. Shri Dipak Dasgupta	2,4	Inputs required from DEA and NITI Aayog

7	Review of specific funding models (PPP etc.) for private sector (domestic and international participation in ILR links)	Resource person(s) to be identified + YES Bank	2,4,5	Risk mitigation mechanisms for private sector participation to be also identified in respect of each type of model/participant
8	Review of financing models and due diligence requirements of international financial institutions (WB etc.)	Resources persons(s) to be identified + Mr. Satish Rao + Shri Dipak Dasgupta	2,4,5	Completed
9	Principles for tariff setting/negotiation for ILR service (irrigation, drinking water, inland navigation, etc)	Chair + Shri A.B. Pandya + Shri Dipak Dasgupta (+ resource person (s))	2,4,5	Possibility of constitution of a ILR tariff regulatory board and its mandate to be also discussed
10	Identification of links for possible declaration as national projects and/or feasible ways of leveraging public finance for participation by other financing partners	Chair + Shri A.B. Pandya + Shri M.K. Mittal + YES Bank + Shri Dipak Dasgupta	2,4,5	Identification of links as national Projects accomplished by Special Committee on ILR, rest is merged with Task No. 4
11	Identification of financing pattern for each (type of) link, including co-financing by beneficiary states	Chair + NWDA + Shri A.B. Pandya + Shri M.K. Mittal + YES Bank + Shri Dipak Dasgupta + Shri Satish Rao + Dr. Tulsidhar	2,4	Completed
12	Declaration of ILR projects as climate change adaptation and mitigation	Chair + Shri Dipak Das Gupta + Dr. A.K. Gosain, IIT Delhi	5	Completed

Directions of Hon. Minister MoWR, RD and GR

- The Chair and Members of the Finance Group were summoned to a review meeting by the Hon. Minister MoWR RD & GR on 03 May 2018. During the meeting, Hon. Minister gave the following directions:
- In order to minimize capital and land costs, the least cost technological alternative to a canal system should be explored for each link. Specifically he suggested the following possibilities:
 - Transportation of water by pipelines
 - Reviewing alignments so that links proceed through backward areas where land costs are low, keeping the topographical requirement of gravity flow in mind
 - Desalination of sea water by renewable energy in coastal areas for drinking water and reuse for irrigation
 - ❖ There may be other technologically feasible alternatives.

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Directions of Hon. Minister...

- The Finance Group should consider prospects of funding of the ILR projects through external borrowing similar to the Ahmadabad – Mumbai bullet train project funding, i.e. Government to Government long term sovereign loan with nominal rate of interest. There would be no need to hedge forex risk as borrowing will be securitized by national forex reserves.
- The Group should also consider prioritization of link projects and plan for funding the prioritized links first (KBLP, PTNLP, DPLP and Godavari (Akinepalli) – Cauvery link).
- Additionally, it should be highlighted that ILR Projects will mitigate floods in surplus basins and drought in deficit basins. ILR projects may be projected as climate change adaptation projects. Some of the link canals can be planned for the co-benefit of inland water navigation.
- As regards funding by participating States, waiver of taxes and levies on the construction equipments, etc. and royalty on construction materials etc. may be considered as part of share cost of the concerned States.
- The Finance Group has attempted to respond to these Directions of Hon'ble Minister.
- However, some of these, for example technological alternatives to individual links and their alignments, are beyond the competence of the Finance Group and will need to be addressed by the Task Force.

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Feedback from Task Force Chair and Members

- During 9th meeting of the Task Force for ILR held on 30.05.18 the Chairman of the Finance Group made a presentation on the progress of the work of the Finance Group. The following feedback was received from the Task Force:
 - An Interim Report may be submitted by the end of July, 2018.
 - Initially funding of Prioritized Links namely Ken-Betwa (DPR prepared), Par-Tapi-Narmada (DPR prepared), Damanganga- Pinjal (DPR prepared), and Godavari (Akinepalli)- Cauvery (PFR) should be worked out.
 - Funding from Government should be kept to a minimum, as suggested by Hon'ble Minister for WR, RD & GR on 03 April 2018 to Finance Group.
 - Outline strategy for international funding should be worked out.

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Summary of basic macroeconomic assumptions

Pessimistic Case		Anticipated Case	
Real GDP (annual)	6.0%	Real GDP	8%
Projected inflation (annual)	4.0%	Projected inflation	4%
Nominal GDP growth (annual)	10%	Nominal GDP growth	12%
GDS rate (% of GDP)	27%	GDS rate (% of GDP)	30%
% of GDS into bank Deposits	22%	% of GDS into bank Deposits	24%
% of agg. deposits in bank credit	75.9%	% of agg. deposits in bank credit	75.9%

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Macroeconomic assumptions...

Credit Deployment	2019-30	2031-40	2041-50
% Credit deployed for Infrastructure	12.5%	13.5%	14.0%
Of which,% Credit deployed for Power	6.7%	6.7%	6.7%
% Credit deployed for Telecom	1.0%	0.9%	0.8%
% Credit deployed for Roads	2.5%	2.6%	2.7%
% Credit Deployment for "Others"	2.3%	3.3%	3.8%
Of which(others), % deployed to ILR programme	3.0%	6.0%	8.0%

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Unique Risk factors:

- The ILR programme involves certain unique risk factors, that need to be addressed *a-priori*, before individual links/groups of links can progress to preparation of DPRs, and sanction.
- These are grouped as:
 - Inter-State issues of specified links/groups
 - International and inter-state issues of specified links/groups
- The links involving these issues are tabulated below. The Interim Report summarizes the specific issues in each case.

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Inter-State Issues:

S.N.	Name of link	States involved
1.	Mahanadi (Manibhadra) –Godavari (Dowlaiswaram) (It is the mother link for many other Peninsular links.)	Orissa, Chattisgarh, and Andhra Pradesh
2.	Godavari (Inchampalli) - Krishna (Pulichintala) link	Telangana, Andhra Pradesh,
3.	Godavari (Inchampalli) – Krishna(Nagarjunasagar) link	Andhra Pradesh, Chattisgarh, MP, Orissa, Karnataka and Maharashtra
4.	Godavari (Polaravam) - Krishna (Vijayawada) link	Andhra Pradesh, Chattisgarh, MP, Orissa, Karnataka and Maharashtra
5.	Krishna (Almatti) – Pennar link	Karnataka, Andhra Pradesh and Maharashtra
6.	Krishna (Srisailam) – Pennar link	Andhra Pradesh, Karnataka and Maharashtra
7.	Krishna (Nagarjunasagar) - Pennar(Somasila) link	Karnataka, Andhra Pradesh and Maharashtra
8.	Pennar (Somasila) - Cauvery (Grand Anicut) link	Kerala, Tamil Nadu, Karnataka, Puducherry and Andhra Pradesh

Inter-State Issues...

9.	Cauvery (Kattalai)-Vaigai -Gundar link	Kerala, Tamilnadu, Karnataka, Puducherry
10.	Ken-Betwa link	Madhya Pradesh and Uttar Pradesh
11.	Parbati-Kalisindh- Chambal link	Madhya Pradesh, Rajasthan, and U.P.
12.	Par-Tapi-Narmada link	Maharashtra and Gujarat

International Issues:

- Head-works and/or part of canal network of the following links lie in other countries such as Nepal and Bhutan, thus involving international aspects/ramifications:
 1. Manas-Sankosh-Teesta-Ganga (MSTG) Link
 2. Kosi-Ghaghara link
 3. Kosi-Mechi link
 4. Gandak-Ganga link
 5. Ghaghara-Yamuna link
 6. Sarda-Yamuna link
- In order to understand international aspects/ international ramifications of other links or Inter Basin Water Transfer Links, it is essential to examine the interdependency of various links.

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Interdependent links:

S.N.	Name of link	International/Inter-state Issues
1.	Manas-Sankosh- Teesta Ganga link(MSTG)	Assam, Bihar, West Bengal besides international implications involving Bhutan
2.	Ganga-Damodar- Subernarekha link	West Bengal, Jharkhand and Orissa
3.	Subernarekha-Mahanadi link	West Bengal and Orissa
4.	Farakka-Sunder bans link	West Bengal
5..	Kosi-Mechi link	Bihar and Nepal
6..	Kosi-Ghaghara link	Bihar, Uttar Pradesh and Nepal
7.	Gandak-Ganga link	Uttar Pradesh and Nepal

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Interdependent...

8.	Ghaghara-Yamuna link	Uttar Pradesh and Nepal
9.	Sarda-Yamuna link	Uttar Pradesh, Uttarakhand, NCR of Delhi, and Nepal
10.	Yamuna-Rajasthan link	Haryana and Rajasthan
11.	Rajasthan-Sabarmati link	Rajasthan and Gujarat
12.	Chunar-Sone Barrage link	Bihar, UP
13.	Sone Dam - Southern Tributaries of Ganga link	Bihar, U.P. and Jharkhand
14.	Jogighopa-Teesta-Farakka link in India (Alternative to MSTG Link)	Assam, West Bengal and Bihar

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Funding options worked out by NCAER for earlier Task Force:

- The estimated total cost of the ILR Programme in 2004 was Rs 5.6 lakh crores, spread over 12-15 years. The annual cost for a 12 year implementation period was estimated at c. Rs 46,500 crores.
- The NCAER Report also identified the following models of raising domestic finance:
- **Direct Private participation:** Private participation was anticipated primarily for the hydropower components (c.34,000 MW). The Debt: Equity ratio envisaged was 70:30. About 25-26% of total cost of the ILR programme may be raised from private participation in hydropower development.
- **Public-Private Partnership (PPP):** PPP was envisaged mainly for canal tributaries and command areas. Two Models were proposed:
 - **Annuity Model:** A developer may be selected on the basis of competitive bids for annuity payments. In this model, Government pay annuity to the developer, and assumes market risks. The Developer bears financing, construction, and operations risks.
 - **Viability Gap Model:** In this model, Government assigns rights for land development, fisheries, etc., and provides gap financing for viability determined by competitive bids. The release of gap financing is subject to the Developer meeting milestones defined in the bid documents.

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NCAER Proposals...

- **Public Participation:** This model would involve tapping the capital markets. Two specific approaches suggested are:
 - **Access to capital markets:** “Green bonds” may be issued by Government with maturity of 20-25 years which may be purchased by institutional investors who may be incentivized through IT rebates under Secs. 54 EC and 54 ED of IT Act.
 - **Retail Investors:** Involves tapping savings of households. There may be two approaches:
 1. Incentives under Sections 80 and 88 of IT Act could be provided to household investors.
 2. Bonds etc. issued by Government for the ILR programme may be eligible for deduction in computation of total taxable income on recurring basis (c. 6 years). The Principal would be non-refundable.

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NCAER Proposals...

- **Banks/FIs:** The ILR programme may be declared a “priority sector” for lending by banks/FIs within the norm of 40% of total lending. Government may borrow from banks and other financial institutions through bonds and various debt instruments. However, care should be taken that the Public Debt: GDP target of public borrowing should not be breached.
- **Cess and Duties:** The NCAER Report also suggested that considering the positive impact of the ILR programme on agricultural output, a cess for funding the programme may be imposed on agricultural *mandis*.
- The NCAER Report also made some recommendations on redirection of fiscal resources for the ILR programme. These included:
 - **Allocations from employment generation schemes:** Part of the allocation for labour employment under (rural) employment schemes (earlier, *Sampoorna Grameen Rozgar Yojana*, now MNREGA) may be allocated for meeting labour costs under ILR.
 - **Other Options:** Various other options that were suggested include:
 - **IT Amnesty scheme:** A scheme of forbearance for unpaid income tax may be declared, with tax arrears and penalty thus recovered being earmarked for the ILR programme.
 - A part of existing allocations on water programmes may be allocated to the ILR programme, and finally
 - A part of Central allocations to beneficiary states may be allocated to the ILR programme.

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Cost recovery proposals by NCAER:

- *The NCAER Report emphasized cost recovery as the key to raising resources from capital markets, and suggested the following approaches:*
 1. Volumetric basis of water pricing, in which irrigation and drinking water tariffs are payable by the users in direct proportion to the volume of water supplied.
 2. Non-volumetric pricing, whereby flat rates for use of irrigation water, perhaps based on area irrigated.
 3. Quotas/rationing, by which a given quantity of water may be supplied for a specified price.
 4. Market based approaches would require assignment of property rights over water, for example a specified tradeable quota per season, following which market interactions between surplus holders (sellers) and deficit holders (buyers) may occur. The land revenue may be enhanced on irrigated land above a certain size of holding.
 5. Cost recovery could also rely on auctions of rights for land development, especially along canal banks that are also used for inland water transport.
- Overall, the proposals by NCAER are rather generic in nature, and do not amount to a clear, pragmatic financing and cost recovery plan. Further, International sources of finance are not considered.

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Updating capital costs of the ILR Programme:

- Preparation of a Financing Plan for the ILR involves as a first step the estimation of the capital costs of the individual links and of the entire Programme. The Group adopted the following methodology for the purpose:
 - Jogighopa - Teesta-Farakka (JTF) link was conceived as an alternate to Manas-Sankosh-Teesta-Ganga (MSTG) link. Due to bilateral agreement between India and Bhutan on implementation of Sankosh dam H.E. Project implementation of MSTG has become a reality, and JTF has been dropped.
 - Earlier Task Force (set up in 2022) headed by Shri Suresh Prabhu had estimated the cost of these ILR projects with MSTG link as Rs.4,44,331 crore and with JTF link as Rs.4,34,657 crore at 2003-04 price level.

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Methodology...

- The Group has considered the link-wise irrigation and power benefits, as worked out in DPR/FR/PFR by NWDA for realistic estimation of cost. As per NWDA studies, total irrigation benefits from identified links is 17.7 million hectare and total anticipated power generation is 32,288 MW
- All the costs have been worked out at 2015-16 Price Level (PL).
- The cost of three projects viz. Ken-Betwa , Par-Tapi-Narmada and Damanganga - Pinjal link projects have been taken as per actuals worked out in their respective DPRs.
- However in case of other links for which DPRs are yet to be prepared, the total updated cost has been worked out by multiplying irrigation benefit with unit cost of irrigation development and power benefit with unit cost of power development.

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Methodology...

- Unit cost of irrigation development has been taken as weighted mean of three suggested links, namely, Ken-Betwa, Par-Tapi-Narmada and Mahanadi-Godavari links. The weighted mean of cost of irrigation development is Rs.3.59 lakh per hectare at 2015-16 P.L
- Since the DPR of Mahanadi-Godavari link is yet to be prepared, the cost of M-G link (as worked out in FR) excluding the cost of land component, was brought to 2015-16 level using price index method while cost of land component was increased by four times, given the requirements of the 2013 Land Acquisition Act. The updated cost of Mahanadi-Godavari link was considered for working out weighted mean of suggested three projects.
- Irrigation benefits (hectares) from Brahmaputra water (about 10.787 BCM) being dropped into Mahanadi river through Manas - Sankosh-Teesta-Ganga, Ganga-Damodar-Subernarekha and Subernarekha-Mahanadi links were assessed and added in total (irrigation) benefits of 29 links to work out total cost of irrigation development. Accordingly irrigation benefit was found to be 13.20 lakh ha.

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Methodology...

- The cost of water supply component was not worked out separately for different links as the cost of this minor component is already included in irrigation component.
- The cost of power development for links generating less than 500 MW was taken as Rs.8.0 crore per MW while that for links generating more than 500 MW was taken as Rs.6.2 crore per MW.
- *Based on the above methodology, the total capital cost of the ILR Programme was worked out as Rs.8.44 lakh crore.*
- *Out of this total cost, Rs.6.39 lakh crore is for irrigation development, Rs.2.02 lakh crore for power development, and Rs.0.03 lakh crore for the exclusive water supply project of Damanganga - Pinjal link.*
- *Additionally cost escalation due to technical uncertainties was uniformly assumed at 25%.*

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given in Table 5.1.

Grouping of links and phasing of implementation:

S.N.	Name of Group of Links	Total Cost Rs. In crore	Duration of DPR preparation	App. Duration of completion of projects	Remarks
1.	Group-1 (MSTG, GDS,SM,FS)	1,13,555	2020-2025	2025-2035	
2.	Group-2 (KG &KM)	75,039	2020-2025	2025-2035	
3.	Group-3 (GG,GY,SY,YR,RS, CSB & SSTG)	4,20,033	2020-2030	2025-2050	
4.	Group-4 (Nine link system starting with MG)	1,25,398	2020-2025	2025-2035	An alternate to part of this has been proposed as Godavari-Cauvery link.
5.	Group-5 (Ken-Betwa)	34,925	Prepared	2020-2030	Priority
6.	Group-6 (PTN)	10,211	Prepared	2020-2030	Priority

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Phasing...

7.	Group-7 (Damanganga-Pinjal)	3008	Prepared	2020-2030	Priority
8.	Group-8 (PKC)	3927	2020-25	2025-2035	
9.	Group-9 (Bedti - Varda)	2183	2026-2030	2031-2040	
10.	Group-10 (Netravati - Hemavati)	1221	2026-2030	2031-2040	
11.	Group-11(PAV)	7281	2030-2035	2035-2050	
12.	Equivalent irrigation from Brahmaputra water dropped in Mahanadi	47,388			It would be developed with Group-4 (Mahanadi-Godavari & others)

Details of the Groups are provided in the Interim Report

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Detailed phasing of 4 prioritized projects:

- Three projects i.e. Ken-Betwa, Par-Tapi-Narmada and Damanganga - Pinjal, and one new project, namely, Godavari (Akinepalli) -Cauvery (Grand Anicut) (alternate to part of Group-4) have been prioritized and are proposed to be implemented over a period of ten years 2020-21 to 2030-31.
- Year-wise funding requirement for these four prioritized projects is given below.
- Adjustments have been made for technical escalation and WPI inflation (4% pa).
- Project cost excludes pre-operative expenses, interest during construction etc., which would be specific to each sub-projects (and are accounted for under revenue expenditure).

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Detailed phasing and funding requirements of 4 priority projects...

Name of Group/Link/FY	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-35	2036-40	2041-45	2046-50	Total Cost	Cost (technical adj)
Ken – Betwa	16	29	51	76	67	53	38	20	0	0					349	437
Par-Tapi-Narmada	9	9	15	15	19	19	15	0	0	0					102	128
Damanganga-Pinjal	0	3	8	7	6	4	2	0	0	0					30	38
Godavari (Akinapalli) - Cauvery (Grand Anicut) (part of Group 4)	0	0	23	36	64	97	86	68	50	26					451	564
Rest of Group 4						35	35	35	35	35	627				803	1004
Group 1						114	114	114	114	114	568				1136	1419
Group 2						75	75	75	75	75	375				750	938
Group 3						168	168	168	168	168	840	840	840	840	4200	5250
Parbati-Kalisindh-Chambal						4	4	4	4	4	20				39	49
Bedti-Varda											11	11			22	27
Netravati-Hemavati											6	6			12	15
P.A.V Link												24	24	24	73	91
Equivalent irrigation from BP water dropped into Mahanadi											158	158	158		474	592
Total Cost, in real terms, 2015-16 prices	26	41	96	134	157	569	537	484	445	422	2605	1039	1022	864	8441	10552
Cost with technical adjustment @25%	32	51	120	167	196	712	672	605	557	527	3256	1299	1278	1080	10552	
Total Cost, in nominal terms	39	65	158	229	278	1053	1034	969	927	913	6099	2960	3543	3644	21911	31

Projections of flow of funds from different sources:

- **A. Projections of finance from domestic Financial Institutions:**

- The ability of FIs to fund infrastructure, is a function of economic growth, rate of inflation, savings rate and deposit mobilization, and credit-offtake to the infrastructure sector.
- The estimated incremental flow of bank credit to the ILR programme in particular, over 2021-2050, on the basis of the macroeconomic assumptions is:
 - ❖ Under the *Pessimistic Case*: at Rs 5.273 lakh crores
 - ❖ Under the *Anticipated Case*: at Rs 9.693 lakh crores

Projections of flow of funds...

- **B. Projections of requirements of Funds from Government (Central and State):**

- The Group felt that an acceptable level of Government financing would demonstrate '*Skin in the Game*' from the Government (Centre and states together) of at least 15% of the total cost. This level of funding is considered essential to convince investors, whether domestic or external, to take Government's commitment and involvement seriously.
- Further, in line with recommendation of the Special Committee on ILR project, the ratio of cost sharing between Centre and States was taken at 90:10
- On this basis the flow of funds from the Government is estimated as:
 - ❖ Rs 3.287 lakh crores from the Central Government, i.e at 15% of total project cost
 - ❖ Rs 0.365 lakh crores from the State Governments, i.e at 2% of total project cost.(This is actually less than a straight line extrapolation of current levels of funding for the major irrigation sector from the Central and state Governments)

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Projections of flow of funds...

- **C. Projections for flow of funds from external assistance:**

- India receives Official External Assistance (OEA) Multilateral Finance institutions (MFIs), such as the World Bank and ADB, and Bilateral agencies, such as JAICA (Japan) and KfW (Germany).
- Currently, MFIs provide 2/3rd of total External Assistance and Bilaterals 1/3rd. Typically, External Assistance is provided in foreign currencies, for longer periods and on softer-than-market terms.
- Over the last three decades, External Assistance has grown 2.8% annually to reach \$9.68 bn in fiscal year 2016-17 (FY2016).
- Two new MFIs have commenced external assistance to India, the Asian Infrastructure Investment Bank (AIIB), and the New Development Bank (NDB).
- The Global Climate Fund (GCF) may also provide significant technical and financial support in the future to promote environmentally sustainable development.

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Projections of flow of funds...

- Future flows of External Assistance will be subject to :
 - India will not be able to access more concessional International Development Agency (IDA) funds from the World Bank.
 - Flow of regular funds from the World Bank is also likely to be flat because India has reached the current “single borrower limit” of the World Bank.
 - ADB lending is likely to increase modestly in the future.
 - New entrants AIIB, NDB, and GCF will likely add significantly to MFI lending in the near future.
 - However, overall MFI support could only see a modest increase in the medium-term. Bilaterals may be expected to maintain 1/3rd share of External Assistance in the future. Based on optimistic assumptions, External Assistance could peak at a level of \$18 billion annually (in nominal terms) in 5 years (FY2021), with \$12 billion from MFIs and \$6 billion from Bilateral agencies.
 - In real terms (at fiscal year 2016 prices), assuming an inflation rate of 2%, cumulative total External Assistance approval of \$272 billion could be expected during FY2021 to FY2040.

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Availability of OEA funds for ILR...

- Sector allocation of External Assistance depends on (i) priorities of the Government of India and the borrowing State Governments as articulated by Ministry of Finance, and (ii) strategic preferences of the agencies providing support.
- In recent years, about 69% of External Assistance was allocated to support infrastructure projects—energy (28%), transport (23%), and water and sanitation—including drinking water supply—(16%).
- If one assumes that ILR hydro-electric projects will receive one fourth of the allocation for energy sector of 28% in External Assistance, about \$19 billion (at FY 2016 prices) will be available for ILR power component during FY2021—2040. Further, if one assumes that 5% of total External Assistance would be available for irrigation component of ILR, an allocation of \$13.6 billion (at FY 2016 prices) could be expected during FY2021—2040.
- Optimistically, the total availability of External Assistance for ILR projects could be \$32.6 billion (at FY2016 prices) during FY2021--2040.
- The total cost of ILR's 30 link projects is estimated at about \$132.6 billion (Rs 8.68 lakh cores at FY2016 prices), comprising about 3/4th (\$99.5 billion) for water transfer & irrigation and 1/4th (\$33.1 billion) for power generation.
- The estimated availability of External Assistance could meet 24.5% of total cost of ILR if sectoral allocations are done as in recent past.

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OEA funding for 4 Priority Projects:

- Four stand-alone ILR projects have been identified as priority projects for external funding. DPRs are available for three of them. The total cost these projects is estimated at Rs 93,800 crore (about USD 14.33 billion) at 2015/16 prices.

Project	Cost at 2015/16 prices (Rs Crore)	Cost at 2015/16 prices (USD Billion)
Par Tapi Narmada	10,200	1.56
Ken Betwa (Both phases)	34,900	5.33
Damanganga - Pinjal	3,000	0.46
Godavari (Akinepalli) - Cauvery	45,700	6.98
Total	93,800	14.33

General considerations for MFI and Bilateral OEA funding:

- At present MFIs and Bilateral agencies, besides others such as pension funds, have largely withdrawn from funding storage irrigation projects.
- This is on account of the concerns raised by international NGOs and others on the environmental and social impacts of such projects, which have received much adverse media coverage.
- The key to engaging the MFIs and Bilaterals is to demonstrate that the ILR programme is consistent with their current mandates.
 - *Poverty alleviation is at the core of the mandates of MFIs and Bilateral agencies.*
 - *Almost all of them see climate change to be the biggest threat to future poverty reduction and the sustainability of past gains in poverty alleviation.*
 - *This realization has brought climate change considerations to the core of operational focus of both MFIs and Bilateral development agencies.*
 - Their strategies and action-plans cover both mitigation and adaptation aspects, and some have explicitly included water security as an important operational priority due to its significant impact on food security and poverty.
 - Some agencies have enhanced their allocation for the water sector to strengthen climate resilience.

Complexity of ILR programme...

- Financial closure for ILR as a whole from international financial institutions, given its complexity and size would be challenging.
- This would require comprehensive due diligence at a national, regional, state and linkage level covering all 29 links which would be impractical for the following reasons:
 - (i) wide geographical spread;
 - (ii) storage/diversion/transportation of large volumes of water;
 - (iii) necessity for inter-state, as well as in case of several links, international political consensus, and legally binding agreement on sharing of costs and benefits over the long project life stretching over decades;
 - (iv) need to significantly improve cost recovery for meeting operational/maintenance costs and servicing debt/equity;

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Complexity...

- (v) upstream-downstream interdependencies requiring strict implementation to sequenced schedules; and
- (vi) wide range of stakeholders (beneficiaries/project-affected, central and state governments, regulators, national/international financiers and civil society etc.) with diverse interests and concerns.
- The large cost gives rise to questions of fiscal affordability and crowding out of other development priorities. The long implementation period (30 years) could bring in other uncertainties. Aggregated impacts of 29 links could raise undue safeguard concerns of financiers, regulatory agencies, project-affected persons and civil society.
- For these reasons, due diligence of ILR as a whole could be a daunting task. Hence, it may be prudent to slice ILR into discrete subprojects of smaller size and cost that are self-standing and phased out over the implementation period to enable a more deliverable due diligence with a subproject focus.

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Advantages of sliced approach:

- Slicing could start with identification of independent linkages that can stand on their own, such as: Ken-Betwa, Damanganga-Pinjal, Par-Tapi-Narmada, Netravati-Hemavati, Pamba-Achankovil-Vaippar etc., i.e. “Single Linkage Projects” (SLPs).
- Thereafter, identifying those that may be combined due to upstream and downstream requirements to form a self-standing subproject i.e. “Combined Linkage Projects” (CLPs).
- Each of these subprojects should be self-contained and complete with clearly delineated costs-cum-benefits and adequate demonstration of “safeguards” compliance to enable due consideration by regulators and financiers.

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Mandates of MFIs for addressing climate change:

- **World Bank:** World Bank’s *Climate Action Plan 2016—2020* supports six high-impact areas: (i) renewable energy and energy efficiency; (ii) sustainable mobility; (iii) sustainable and resilient cities; (iv) climate-smart land use, and water and food security; (v) green competitiveness; and (vi) leaving no one behind.
 - The Bank envisages using ecosystem-based adaptation (natural infrastructure), land restoration, integrated water management, and biodiversity conservation.
 - In 2017, climate financing (of about \$12.8 billion) represented 22% of the Bank’s new commitments; and the Bank aims to raise this share to 28% of its total support by 2020.
- **Asian Development Bank (ADB):** ADB’s *Climate Change Operational Framework 2017—2030* envisages: (i) supporting nationally determined contributions (NDCs) to mitigate climate change, (ii) enhancing support for low-carbon development, (iii) promoting climate change adaptation, (iv) Integrating climate change adaptation and disaster risk management, and (v) linking climate actions to wider sustainable development agenda.
 - The Framework proposes to increase annual climate change support to \$6 billion by 2020 (\$4 billion for mitigation and \$2 billion for adaptation) and to much higher levels thereafter. In 2017 ADB provided \$4.5 billion for climate change support (22.3% of total support).

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Mandates...

- **Asian Infrastructure Investment Bank (AIIB):** Its thematic priorities include the promotion of sustainable infrastructure to enable countries meet their environmentally sustainable goals.
 - AIIB future pipeline of projects has a sizable presence of seven water sector projects for \$1.5 billion for processing in 2018 and 2019.
- **New Development Bank:** Addressing climate change is a strategic objective for the Bank. NDB seeks to allocate about 66% of its resources to develop sustainable infrastructure during 2017--2021.
 - Water is a priority area for NDB and it will support: (i) irrigation infrastructure,(ii) clean drinking water supply and sanitation, and (iii) efficient use of water through adoption of latest technology.
- **Japan International Cooperation Agency (JICA):** Climate change is a major concern for JICA.
 - JICA's strategies for climate change focus on four priority areas to: (i) develop low-carbon and climate resilient infrastructure; (ii) prevent and reduce future climate-related risks by promoting comprehensive risk management across sectors including disaster risk management and food and water security; (iii) build capacities in developing countries to formulate policies to plan, implement, monitor and improve climate actions; and (iv) to enhance conservation and improve management of forests and other ecosystems.

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Enhanced Due Diligence Requirements (DDR) for External Assistance

- **Broader due diligence beyond the subproject:** Broader due diligence beyond the subproject-level will be required so as to provide the larger ILR context when seeking financing approvals for subprojects, in particular from MFIs and Bilaterals.
 - Such broader due diligence may need to touch upon the following: (i) macroeconomic impacts—such as GDP growth, sectoral GDP growth, trade competitiveness, impacts on poverty and social equity, impacts on energy demand and supply, agricultural inputs demands, etc.; (ii) availability of fiscal space under the Fiscal Responsibility and Budgetary Management (FRBM) legislation; (iii) optimal cropping patterns—by region and state—with and without climate change, with and without ILR; (iv) national/regional environmental impacts and mitigation options; (v) hydrological impacts – surface, ground, river – taking all into account; (vi) regional climate change impacts – on precipitation, temperature, humidity, and winds; (vii) potential of ILR to address adaptation in respect of hydrology; (viii) social impacts -- income distribution across social classes, impact on employment at national level, impact on land values; and (ix) environmental impacts – cumulative environmental impact assessment.

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Due diligence requirements of subprojects:

- Due diligence requirements (DDRs) of MFIs, are in principle similar, but their application would vary across MFIs.
- The scope and depth of DDRs will be determined by the projects' complexity and their social and environment impacts. Most ILR projects ("Category A") would require more extensive consultation processes *that are different from national systems*.
- The key to MFI financing is demonstrating that ILR is a "*climate change adaptation*" project because their mandates typically include water security under "climate financing". This involves:
 - Current situation of supply, demand and the demand-supply gap/deficit for water
 - Further worsening of the demand-supply gap/deficit for water due to climate change demonstrated by projecting supply of, and demand for, water resources with due consideration to climate change and changes in cropping patterns, one, *without ILR* and, two, *with ILR*
 - Improved demand-supply balance/ reduced deficit and uncertainty through transfer of water from north to south
- Demonstrating the climate change adaptation potential of individual (or Group of) links on the above basis will require detailed modeling studies as part of subproject due diligence.

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Due diligence status of 4 prioritized subprojects:

- DPRs are available for three projects. They are quite comprehensive in their technical project design appraisal and there is detailed discussion on alternatives and have considered: (i) geotechnical evaluations done on alternative sites for the proposed dams, (ii) techno-economic evaluation of alternative types of dams for finalizing their design and location, and (iii) evaluation of different alternative alignments and design.
- However, Social and Environmental impact assessments of the DPRs may require a careful review for their comprehensiveness and validity. A reassessment of stakeholder consultation process followed and social impact assessment studies carried out will be needed for all projects.
- Economic and financial appraisals of the projects also need to be revised because they are based on a methodology which differs from that of MFIs.
- In addition, seeking international funding for the subprojects on the consideration that climate change adaptation is among their major objectives, will require further due diligence, as set forth above.

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Financing modalities:

- Generally External Assistance is provided in three broad modalities:
- **Loans:** Loans are provided in several forms: (i) a single project loan, (ii) flexibly as multiple loans (tranches) under a project framework facility ("multi-tranche financing facility"), (iii) based on project's progress/output/outcome, (iv) sector loans, and (v) local currency funding. Of these, the multi-tranche financing facility offered by some MFIs is most suited for long gestation ILR projects. Funding in local currency would eliminate the exchange rate risk on public finances of borrowing governments.
- **Technical assistance (TA):** MFIs and Bilateral agencies provide TA to help: (i) identify and formulate, implement, and operate projects/programs; (ii) promote innovation and transfer new knowledge/technology; (iii) encourage international cooperation to address regional issues; (iv) conduct studies to design good sector and thematic policies and reform programs; (v) promote partnerships including with international agencies, think tanks, and research institutions, and non-governmental organizations (NGOs) to generate new knowledge to promote sustainable development; and (vi) strengthen institutional capabilities of developing countries.
- **Funding through partnerships:** Both MFIs and Bilateral agencies seek to use their resources to leverage additional funds through co-financing by pooling funds to finance a project or by financing two separate components of a project parallelly..
- In general participation of MFIs in financing a project or programme is viewed very positively by Bilaterals, sovereign wealth funds, pension funds, etc.. because of the perception that participation by a MFI ensures comprehensive due diligence on all relevant aspects, proper consultation with all stakeholders, reliable assessment of project risks, buy-in (including by way of sovereign guarantees) of the host Government, and a robust system of monitoring of project implementation, as well as safeguards against adverse project impacts.

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Next steps for international funding:

- All proposals for External Assistance will have to be channeled through DEA to MFIs and Bilateral agencies.
- DEA expects DPRs to be ready before proposing a project for external support.
- Other IFIs could also be approached for co-financing, once one or more MFIs express interest.
- NWDA may send DPRs of three priority ILR projects to DEA to solicit External Assistance for they seem to fit in the current priorities of MFIs and JICA.
- However, some initial analysis to establish their potential for climate change adaptation may be advisable before approaching MFIs.

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Potential of ILR programme to address climate change adaptation in India:

- Studies have been carried out involving modeling of climate change impacts from the baseline (1961-1990) to mid-century (2021-2050) and further to end century (2071-2099), covering all major river basins in India, by a team lead by Prof. A.K. Gosain at IIT Delhi.
- The team employed the SWAT Hydrological Model, with daily weather datasets provided by the Indian Institute of Tropical Meteorology (IITM) Pune.
- The climate change scenario assumed for the hydrological modeling exercise is the IPCCs SRES A1B scenario (Q14 QUMP Ensemble).

Ref: Gosain, A. K., Sandhya Rao, and Anamika Arora (2011). Climate change impact assessment of Water Resources of India, Current Science, Vol. 101 (3), pp 356-371

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Potential of ILR...

- **Findings:** The major adverse impacts of climate change on the Indian land-mass is reduction in the number of rainy days (nearly 60% of the rain-fed area is under threat), to address which supplementary irrigation through storage structures is necessary. There is marked increase in intensity of rain, on account of which there is significant increase in soil erosion leading to enhanced sedimentation, and greater frequency and intensity of floods.
 - Possible adaptation options to these impacts of climate change include: (i) creation and effective management of storage capacity, and real-time flood forecasting, (ii) transfer of water from overall surplus to overall deficit basins.
 - These options will also address the increased incidence of droughts and floods due to climate change.
 - These options cannot be viewed in isolation, and must be part of a comprehensive plan to restore the hydrological and environmental health of the river basins for long-term sustainability.

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Financing Plan for ILR:

Projection of flow of funds by source:

Source	Pessimistic Case (INR bn)	% share of cost	Anticipated case (INR bn)	% share of cost
Domestic SCBs	5273	24%	9693	44%
GOI – Skin in the Game	3287	15%	3287	15%
States	365	2%	365	2%
Residual*	12986	59%	8566	39%

**Residual comprises of funding from multilateral and bilateral institutions, domestic financial institutions (excluding SCBs)*

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Projection of flow of funds by source and phasing of projects:

- The detailed flow of funds in INR bn (100s crores) from Scheduled Commercial Banks (SCBs) and Government (both Centre and States) on a year-to-year basis over 2020-30 and 5 year phases over 2031-50 is summarized below
- The gap between total cost and combined funding from domestic SCBs and Government (both Centre and States) would need to be met from residual sources, which would comprise of Multilateral and Bilateral financial institutions, international private funds (such as pension funds), domestic financial institutions (excluding SCBs) among others.
- Funding from domestic SCBs gathers pace after a lag of initial 10 years. This is because Banks would want to see success in projects in early stages of the ILR programme.
- After 2040, the entire incremental cost of ILR can be financed from domestic SCBs alone under the anticipated case.

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Year wise flow of funds for projects under ILR (Rs Billion)

IFI funding (INR bn)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-35	2036-40	2041-45	2046-50	Total
Base case	7	8	8	9	10	11	12	14	15	16	655	508	197	202	5273
Anticipated Case	9	10	11	12	14	16	18	20	22	25	931	886	349	422	9693
Govt funding															
Gol - Skin in the Game	6	10	24	34	42	158	155	145	139	137	915	444	531	547	3287
State's share	1	1	3	4	5	18	17	16	15	15	102	49	59	61	365
Cost of ILR project															
Total cost	39	65	158	229	278	105	103	969	927	913	609	296	354	364	2191

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Year-wise percentage shares of funds for ILR from different sources:

Scenario 1	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031-35	2036-40	2041-45	2046-50	Total
IFI - base case	18%	12%	5%	4%	4%	1%	1%	1%	2%	2%	11%	17%	56%	56%	24%
Gol - Skin in the Game	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
State's share	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Residual*	65%	72%	78%	79%	80%	82%	82%	82%	82%	82%	73%	66%	28%	28%	59%
Scenario 2															
IFI - Anticipated case	23%	15%	7%	5%	5%	1%	2%	2%	2%	3%	15%	30%	99%	116%	44%
Gol - Skin in the Game	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
State's share	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Residual*	61%	68%	76%	78%	78%	82%	82%	81%	81%	81%	68%	53%	-15%	-33%	39%

*Residual comprises of funding from multilateral and bilateral financial institutions, domestic financial institutions (ex SCBs)

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Impact of ILR financing on Centre's fiscal deficit:

- We assume that 15% of Government's share of cost financing is done via Gross Budgetary Support (or via equity infusion in a SPV), then we estimate the impact on fiscal deficit (as a % of GDP) as –
 - *At 42 Bps (0.42 %) for the cumulative period over 2021-50.*
- Note that the impact is extremely small. The 15% cost share can be easily financed through Government's savings with no perceptible impact on fiscal deficit.
- **Impact on Government debt**
 - We work with the worst case scenario, i.e. assuming that all cost of ILR program is raised as debt, on which the Government pays the cost of servicing the debt (assuming a 7% average rate of interest).
 - *Cumulative impact (over 2020-30) on Centre's General Debt at 2.8% (of GDP)*
 - *Additional cost owing to servicing the debt at 4 bps (0.04% of GDP), over 2020-50*

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Summary of recommendations:

- The Group recommends that at-least 15% funding should come from Government sources (Centre and States); otherwise it will be difficult to elicit the interest of domestic and international financial institutions.
- Given the mandate of multilateral and bilateral financial institutions for funding climate change and adaptation and mitigation projects, funding for the ILR from these institutions may be sought on the basis of the climate change adaptation potential of ILR established through published research and the mandate in the action plan on water resources in NAPCC. The Government should include the ILR programme in India's Nationally Determined Contribution (NDC) under the Paris Agreement.
- Four projects: Ken – Betwa, Damanganga – Pinjal, Par – Tapi – Narmada and Godavari (Akinapalli) – Cauvery link projects have been prioritized and planned to be implemented during the first ten year period, 2020-2030.
- In order to secure external funding for the ILR projects from international financial institutions – MFIs, Bilaterals, and private funds such as pension funds, enhanced due diligence for each subproject in terms of due diligence requirements of MFIs would need to be undertaken. This would include establishing the climate change adaptation potential of each subproject/Group by detailed modeling exercises.

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Summary...

- In order to advance understanding of the overall economic, environmental, and social benefits, as well as to establish the potential to address climate change adaptation of the entire ILR programme, it would be worthwhile to conduct a detailed macro-level modeling study by competent Indian institutions.
- The key to eliciting and sustaining the interest of financial institutions, (domestic and external), in financing the ILR programme is to clearly identify the sources and means of cost-recovery. This aspect was also highlighted by the earlier Task Force on ILR headed by Shri Suresh Prabhu. However, in this Interim Report, this aspect has not been dealt with.
- The institutional arrangements for implementation of the ILR, including the institutional modalities for financing have also not been dealt with in this Interim Report.
- The Special Committee on Interlinking of Rivers in its 14th Meeting held on 17th January, 2018, recommended that all the Interlinking of Rivers Projects under NPP be included in the list of National Projects. As such this Group has not deliberated on this item of TOR.

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thank you

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