

Inland Water Transport – Potential for use in Movement of Fertilizers

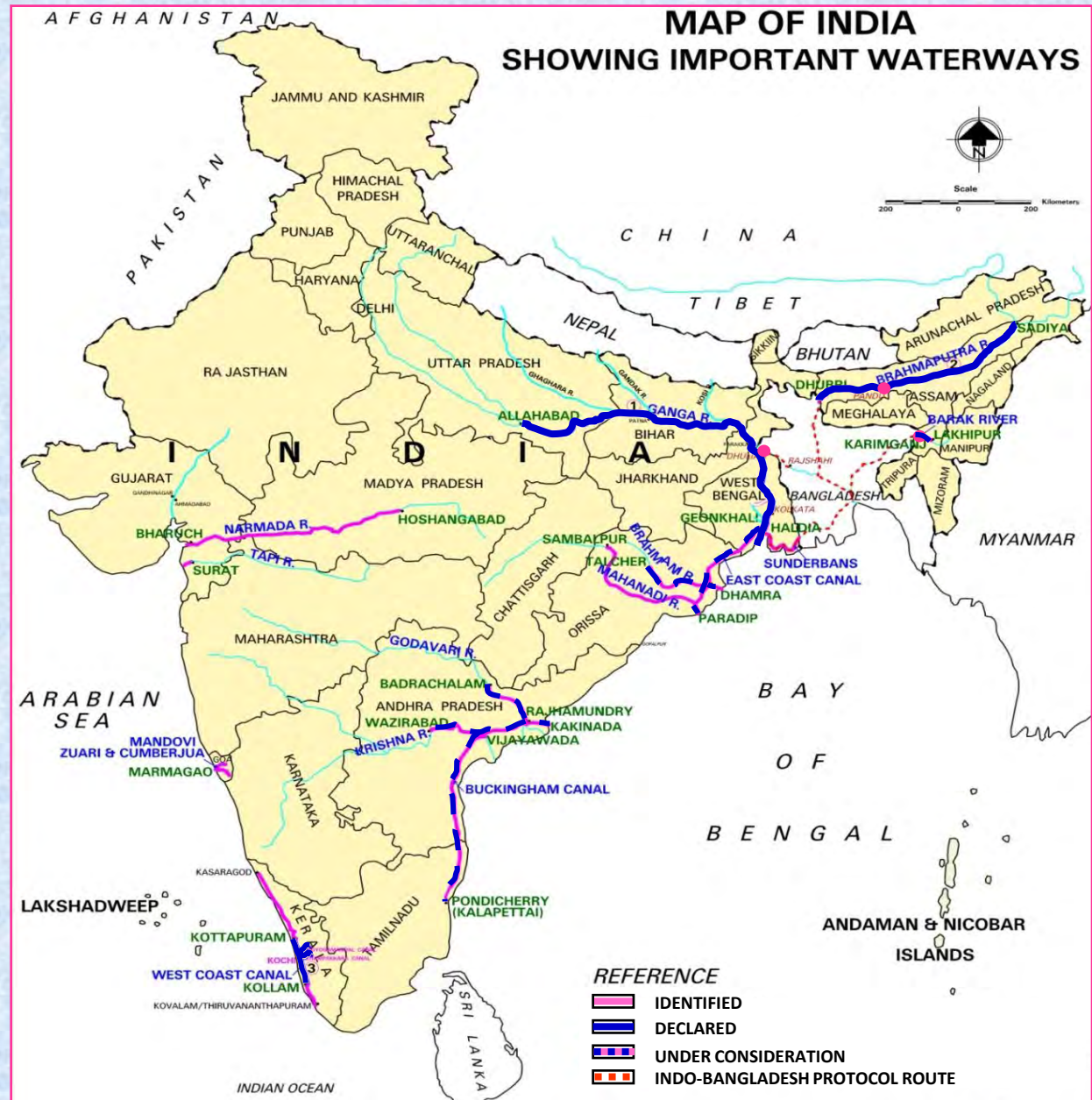


Inland Waterways Authority of India

28th January 2010

Waterways of India

- Role of IWAI- Develop infrastructure and Regulate movement on National Waterways
- 3 National Waterways developed & operational
- Govt has notified two more waterways i.e NW 4 and NW 5 in Nov.2008
- Other waterways to be developed by States



National Waterway - 1

Distance

1620 km Haldia- Allahabad

Fairway

Least available depth (LAD)

- 3 m Haldia-Farakka
- 2.5 m Farakka -Patna
- 2 m Patna- Varanasi
- 1.5m Varanasi-Allahabad

Navigational Aids

- Night navigation aids available between Tribeni and Farakka (being extended upto Varanasi by March 2010)
- Day navigational aids on entire stretch



National Waterway - 2

Distance

Dhubri to Sadiya – 891 km

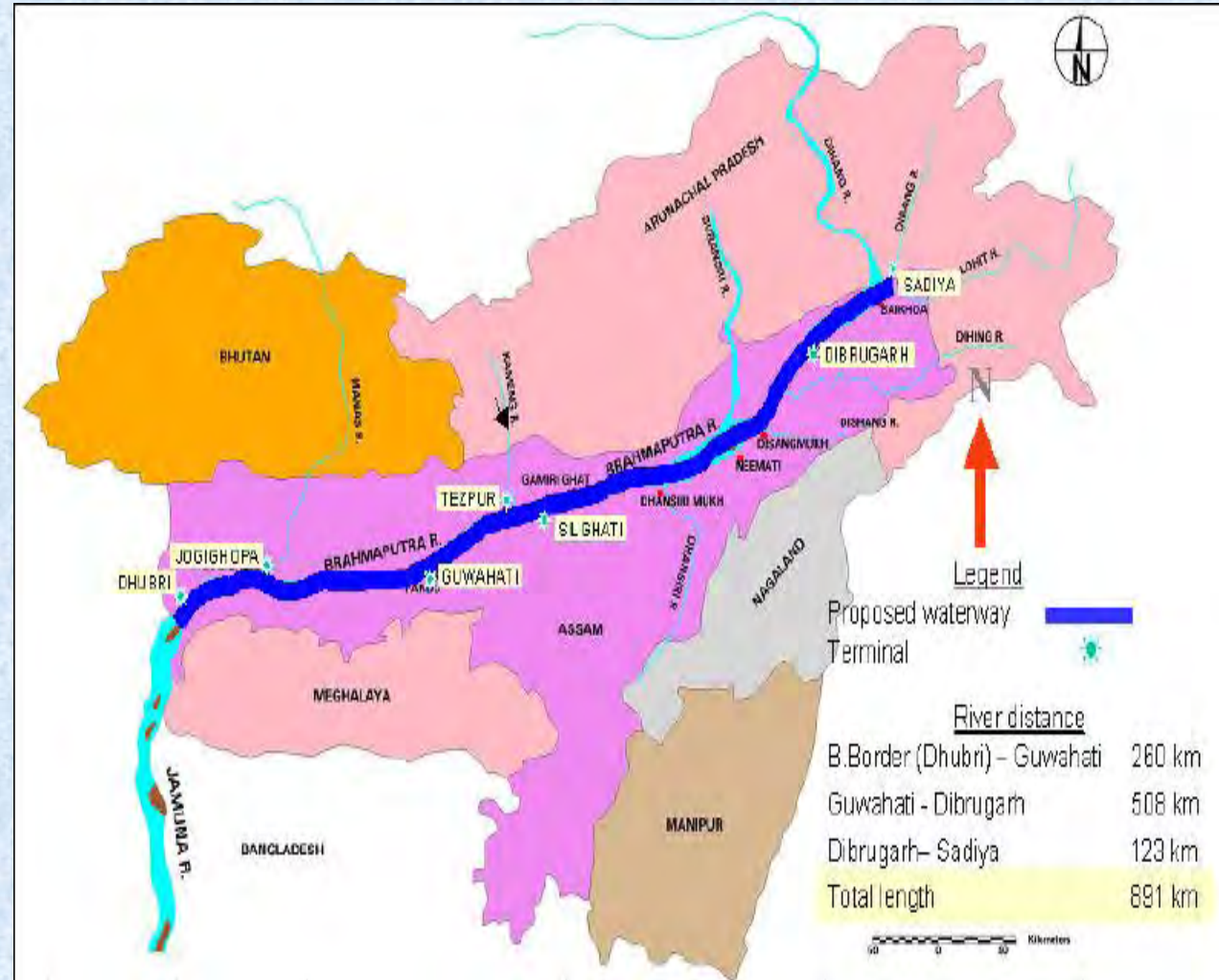
Fairway

Least available depth (LAD)

- 2 m Dhubri- Dibrugarh (768 km)
- 1.5 m between Dibrugarh - Sadiya

Navigational aids

- Night navigation aids also available between Dhubri and Dibrugarh (768 km)
- Day navigation aids available in entire waterway



National Waterway – 3

Distance

- 205 km West Coast Canal (Kottapuram – Kollam)
Udyogamandal & Champakkara canals

Fairway

Least available depth (LAD)

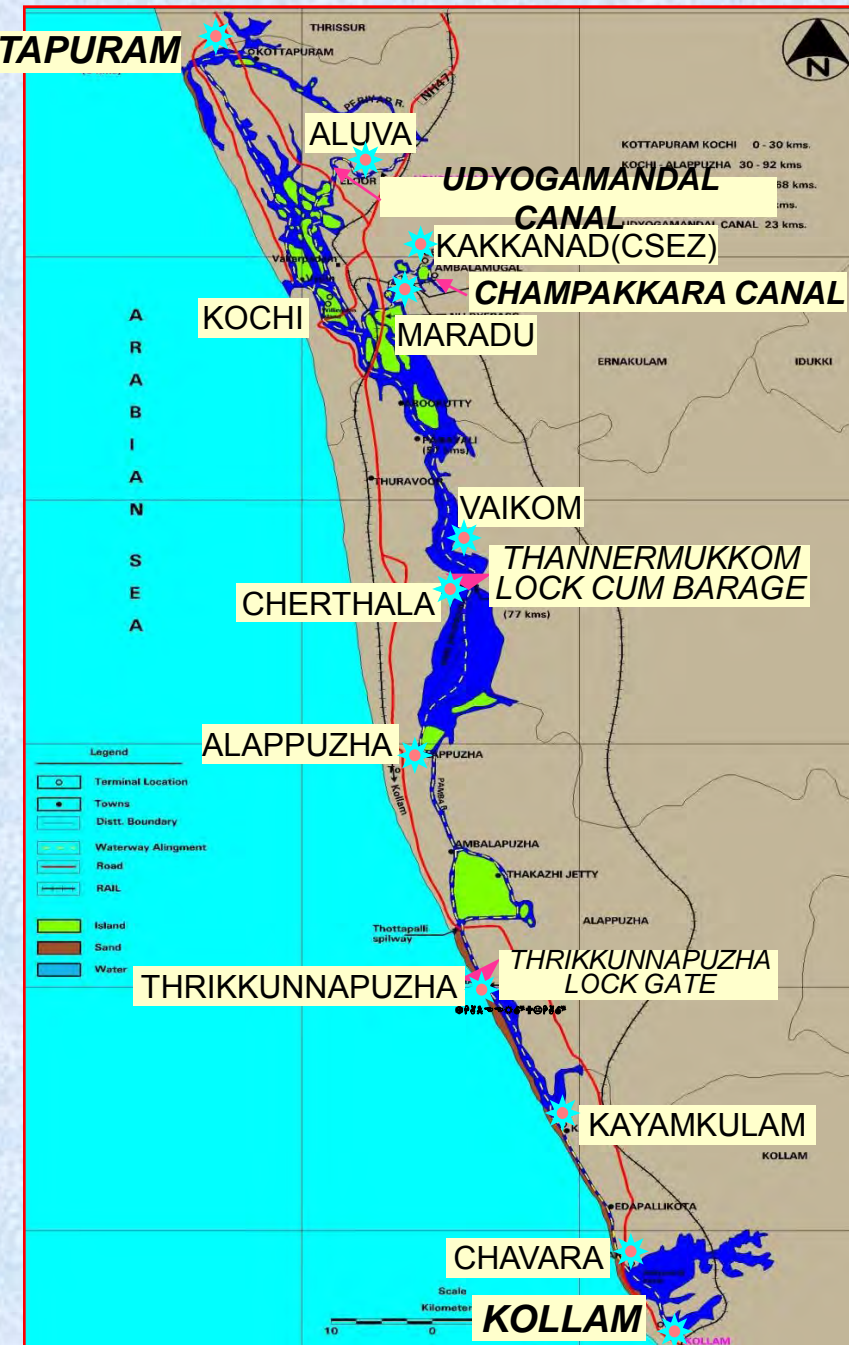
- 1.5 m Kottapuram - Kochi
- 2 m Kochi - Alappuzha
- 1.5 m Alappuzha - Kollam
- 2 m Champakara Canal
- 2 m Udyogmandal canal

With completion of capital dredging, 2 m LAD would become available in entire stretch

Navigational Aids

Night navigation aids available on entire stretch

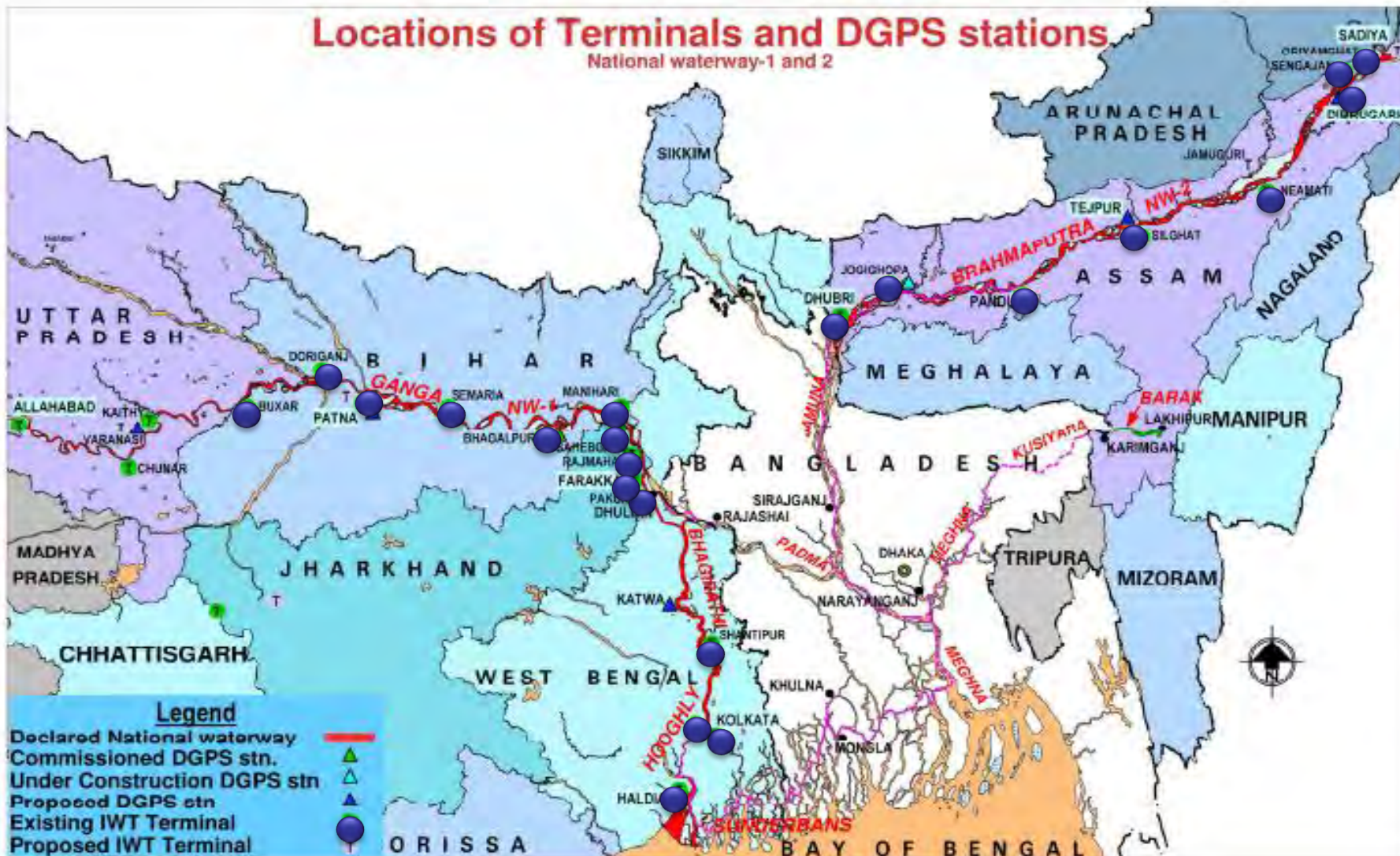
KOTTAPURAM



IWT Terminals on NW 1 & 2

Locations of Terminals and DGPS stations

National waterway-1 and 2



Inland waterways Advantage

- Energy efficiency – 1HP can move approx.150 kg on road, 500 kg by rail & 4000 kg by IWT
- Fuel efficiency – 1 litre of fuel can move 24 ton km by road, 85 ton km by rail & 105 ton km by IWT
- High single unit carrying capacity – one Barge =15 rail wagons =60 trucks
- Environment friendly – low air & noise pollution
- No need for land acquisition
- Suitable for movement of bulk cargo like coal, cement, flyash, foodgrains, fertilizers
- Least capital intensive

IWT scenario

- Cargo movement by IWT showing an increasing trend: 58.08 million tonnes (3.56 btkm) in 2008-09 as compared to 32.48 million tonnes (1.63 btkm) in 2003-04
- However, usage of IWT still minimal in India
- Integration of coastal shipping with IWT and transportation of imported goods from ports through IWT holds the key for greater use of IWT

Status of Fertilizers

- Increasing trend in consumption of chemical fertilizers -1.61crore tonne in 2001-02 to 2.26 crore tonne in 2007-08
- 56 large size fertilizer plants in India
- Country largely self-sufficient in Nitrogenous fertilizers – urea
- Dependent on import of raw materials & intermediates required for production of Phosphates
- Fully dependent on imports of Potash

Fertilizer Movement Today

- More than 110 lakh tonnes of fertilizer imports per annum
- Imported fertilizer handled at 29 ports
- Minor ports handle nearly 35% of imported fertilizers
- Railways move nearly 75 percent of fertilizers
- Congested bottleneck routes; shortage of covered wagons; pilferage major problems
- Balance moved by roadways

IWT potential

- Major consumption States like Bihar, West Bengal and eastern Uttar Pradesh can be served by IWT
- Fertilizer imports can be taken to major consumption points through integration of coastal shipping & IWT
- If volumes are committed, logistics operators can offer 'economically viable' rates using IWT as a multi-modal logistics solution
- IWAI can play role of 'facilitator'

Policy Support

- M/o of Chemicals & Fertilizers should **include IWT** for payment of **equated freight subsidy** to manufacturers to cover transportation costs from production plants to consumption centres
- Provision of navigable fairway, Night navigation facilities, Fixed & floating Terminals with mechanized cargo-loading & unloading facilities to be provided by IWAI

THANK YOU

Why IWT ?

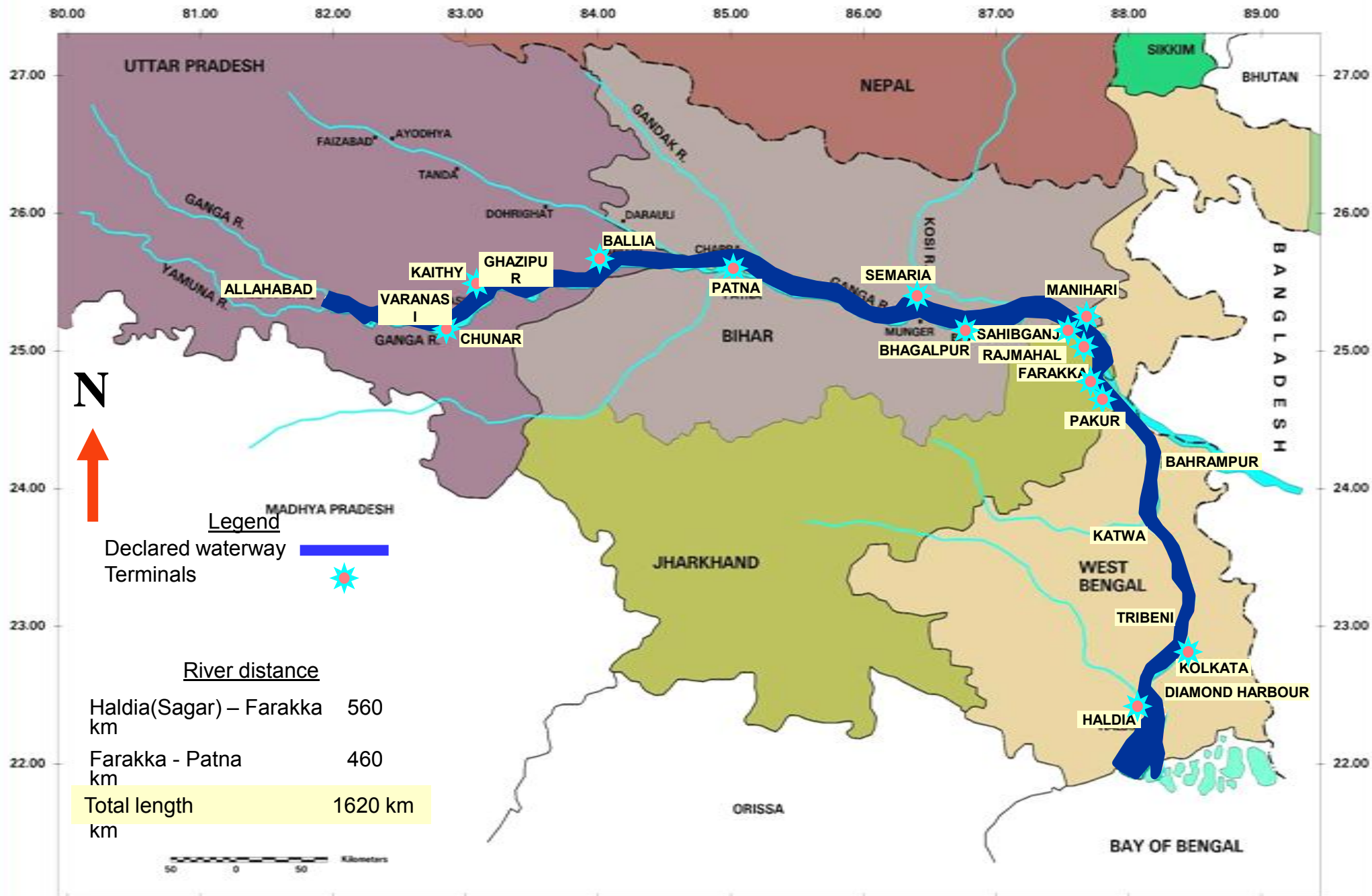
- India is a large and diverse country and its GDP is growing fast
- Its transport needs too are growing rapidly
- Rail and road modes are overburdened and congested
- Their expansion requires huge capital investment and time as well as land acquisition, which is a difficult proposition

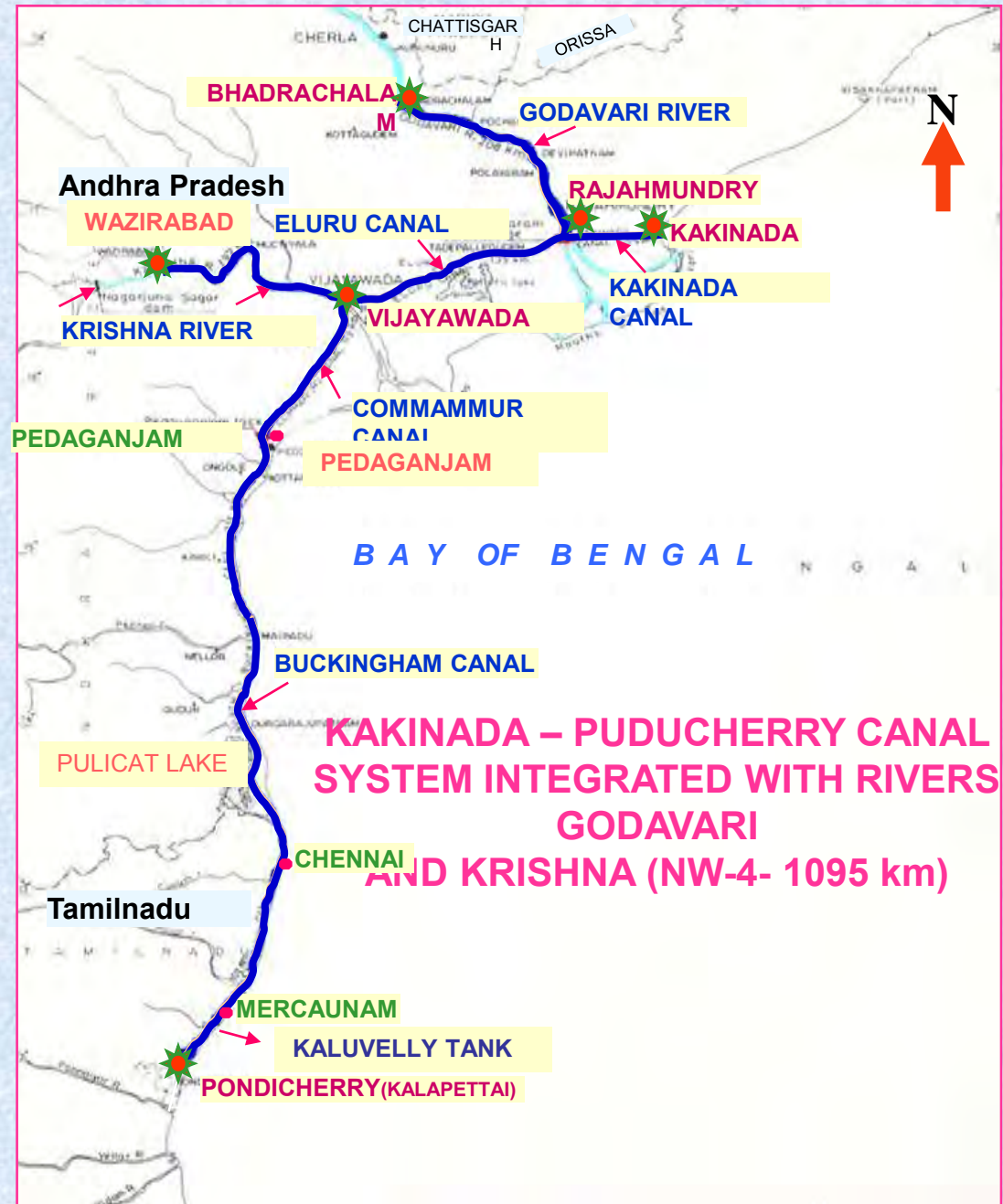


- There are five National Waterways
 - NW-1 — Ganga (1620 km)
 - NW-2 — Brahmaputra (891 km)
 - NW-3 — West Coast Canal (205 km)
 - NW-4 — Kakinada-Puducherry canals with Godavari & Krishna rivers (1095 km)
 - NW-5 — East Coast Canal with Brahmani river (623 km)
- Total length of 4434 km. declared National waterways

GANGA - BHAGIRATHI - HOOGLY RIVER SYSTEM

(NATIONAL WATERWAY No. - 1)





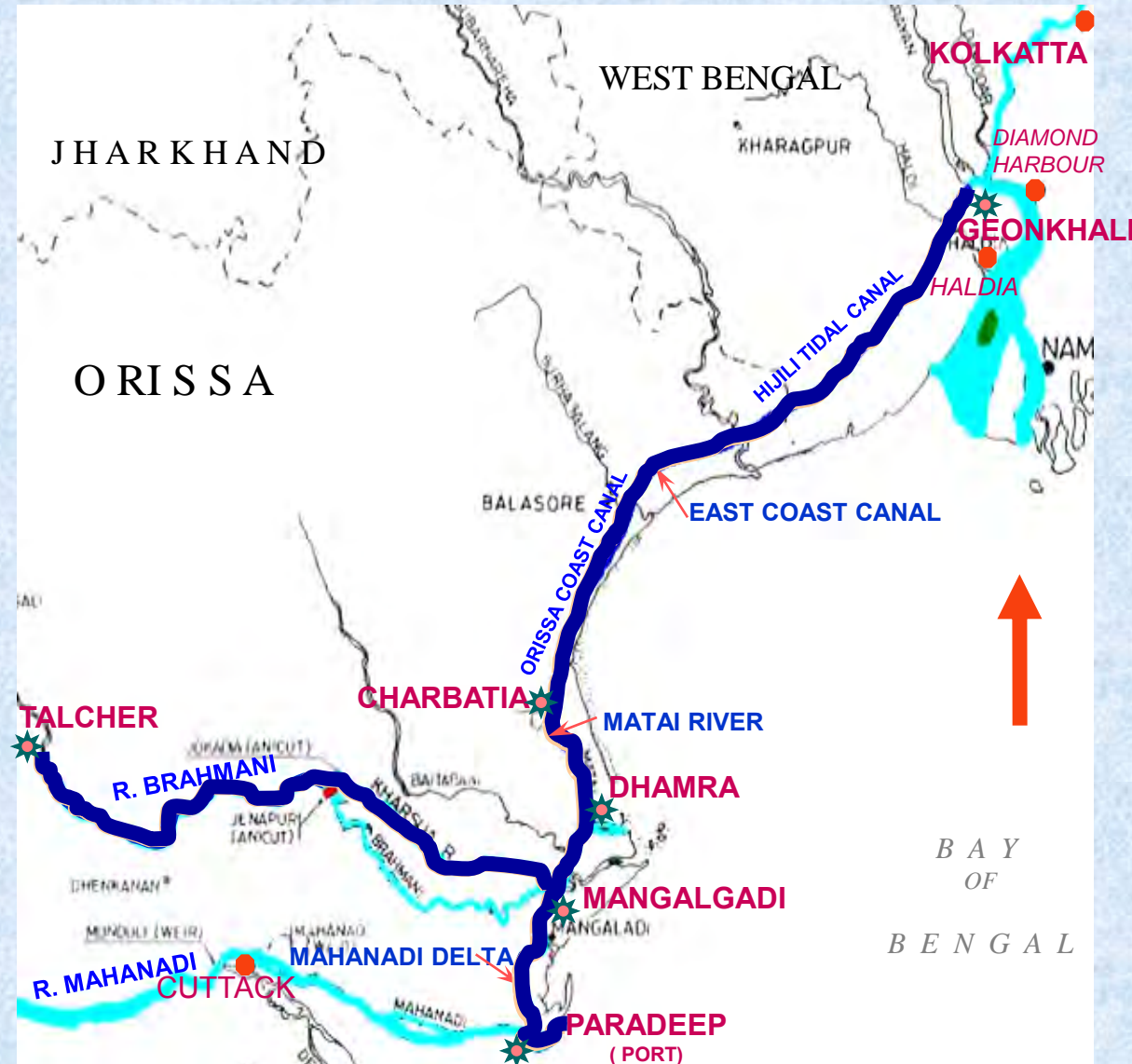
National Waterway (No 5)

- East Coast Canal with Brahmani river & Mahanadi delta

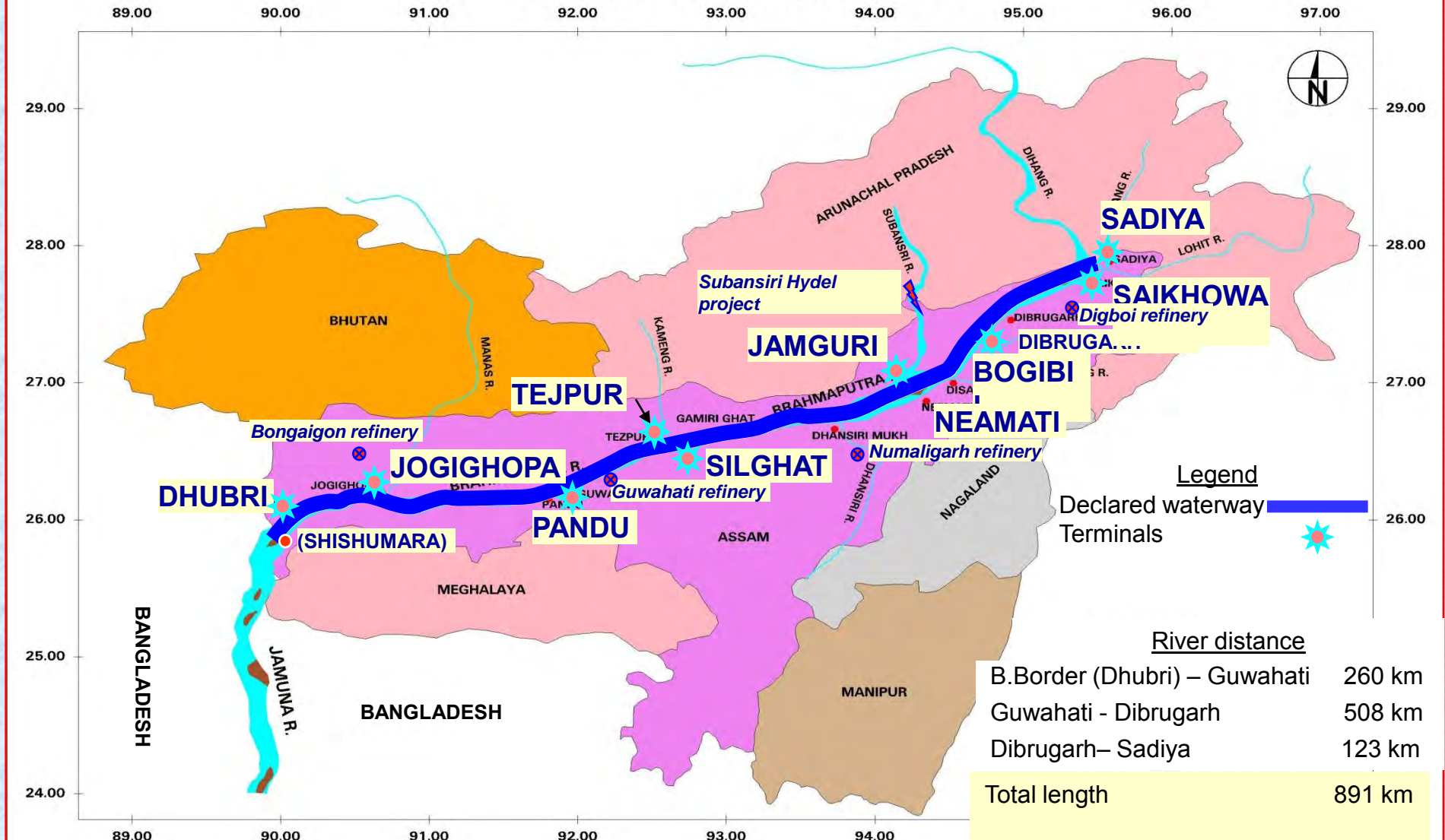
- ❖ Length - 623 km

- ❖ Notified on 25.11.2008

- ❖ DPR being finalised



BRAHMAPUTRA RIVER (NATIONAL WATERWAY No. - 2)



KOTTAPURAM

N

National Waterway-3

West Coast Canal
(Kottapuram – Kollam)
Champakkara & Udyogamandal canals

River distance

Kottapuram - Kollam	168 km
Udyogamandal canal	23 km
Champakkara canal	14 km
Total length	205 km

KOCHI

KAKKANAD(CSEZ)

UDYOGAMANDAL CANAL

MARADU

VAIKOM

CHERTHALA

THANNERMUKKOM
LOCK CUM BARRAGE

ALAPPUZHA

THRIKKUNNAPUZHA

THRIKKUNNAPUZHA
LOCK GATE

KAYAMKULAM

CHAVARA

KOLLAM

Arabian Sea

Legend

Waterway alignment

Road

Rail

Important places





National Waterway-5

(East Coast Canal integrated with Brahmani and Mahanadi delta river system)





Investment on NWs

- Over the years, Gol through IWAI has made investments of over Rs.850 cr in development of NW 1, 2 & 3 mostly in the last decade
- Miniscule when compared to investments made for development of road & rail modes
- Investment of Rs.5000 cr is envisaged for development of NW 4 & 5 in next ten years
- Gol is also making substantial investment in development of Indo-Bangladesh Protocol route & Kaladan Project in Myanmar

IWT- Limitations

- Slower mode
- Extra handling – by nature intermodal
- Rivers longer than road/rail
- Special aids required for night navigation
- Adequate number of vessels not available in private sector

Essential requirements

- Fairway
 - Navigational aids
 - Terminals with cargo handling equipments
 - Inland vessels
-
- It is envisaged that while first three should be developed by public funding, the vessels should primarily come from private sector, dictated by market forces

What has been done so far

- Many cargo specific projects (e.g. Coal for thermal power plants, cement plants, project cargo including over dimensional cargo) identified and being acted upon
- 3 JVs for addition of cargo vessels formed
- Export of Fly-ash reached to a level of 1.4 million tones in 2008 from 0.2 million tones in 2003
- 40 million tonnes of iron ore and 10 million tonnes of steel already use waterways of Goa and Mumbai

Physical status of NWs

	Existing	Target (2011-12)
Fairway (Least Available Depth in meter)		
NW-1 (1620km)		
Haldia-Farakka (560)	2.5 (330 days)	3.0 (330 days)
Farakka-Patna (460)	2.0 (300 days)	2.0 (330 days)
Patna-Varanasi (363)	2.0 (270 days)	2.0 (330 days)
NW-2 (891km)		
Dhubri-Dibrugrah (768)	2.0 (300 days)	2.0 (330 days)
Dibrugrah –Sadiya (123)	1.5 (180 days)	1.5 (330 days)
NW-3 (205km)		
Kochi-Allapuzza (120)	2.0 (300 days)	2.0 (330 days)
Remaining stretch(85)	1.5 (300 days)	2.0 (330 days)

Physical status of NWs

	Existing	Target (2011-12)
Terminals		
NW-1 (1620km)		
Fixed	Patna(LL), Pakur, Farakka	Patna(HL), Varanasi, Kolkata, Haldia
Floating	14 places	14 places + Shore facilities
NW-2 (891km)		
Fixed	Pandu (LL)	Pandu (HL)
Floating	8 places	9 places +Shore facilities
NW-3 (205km)		
Fixed	8 places	9 places

Physical status of NWs

	2009-10	Target (2011-12)
24 hrs Navigational aids		
NW-1	Tribeni - Farakka(364)	Tribeni - Varanasi(1187)
NW-2	Dhubri - Neamati (629)	Dhubri - Sadiya (891)
NW-3	Entire Waterway (205)	Entire Waterway (205)
Vessels		
Dredgers	8 + 9	17
Survey Vessels	18	18
Cargo Vessels	6 +1	7

Dredging in river Ganga



Hydraulic surface dredger in Ganga



Bandalling on NW-1



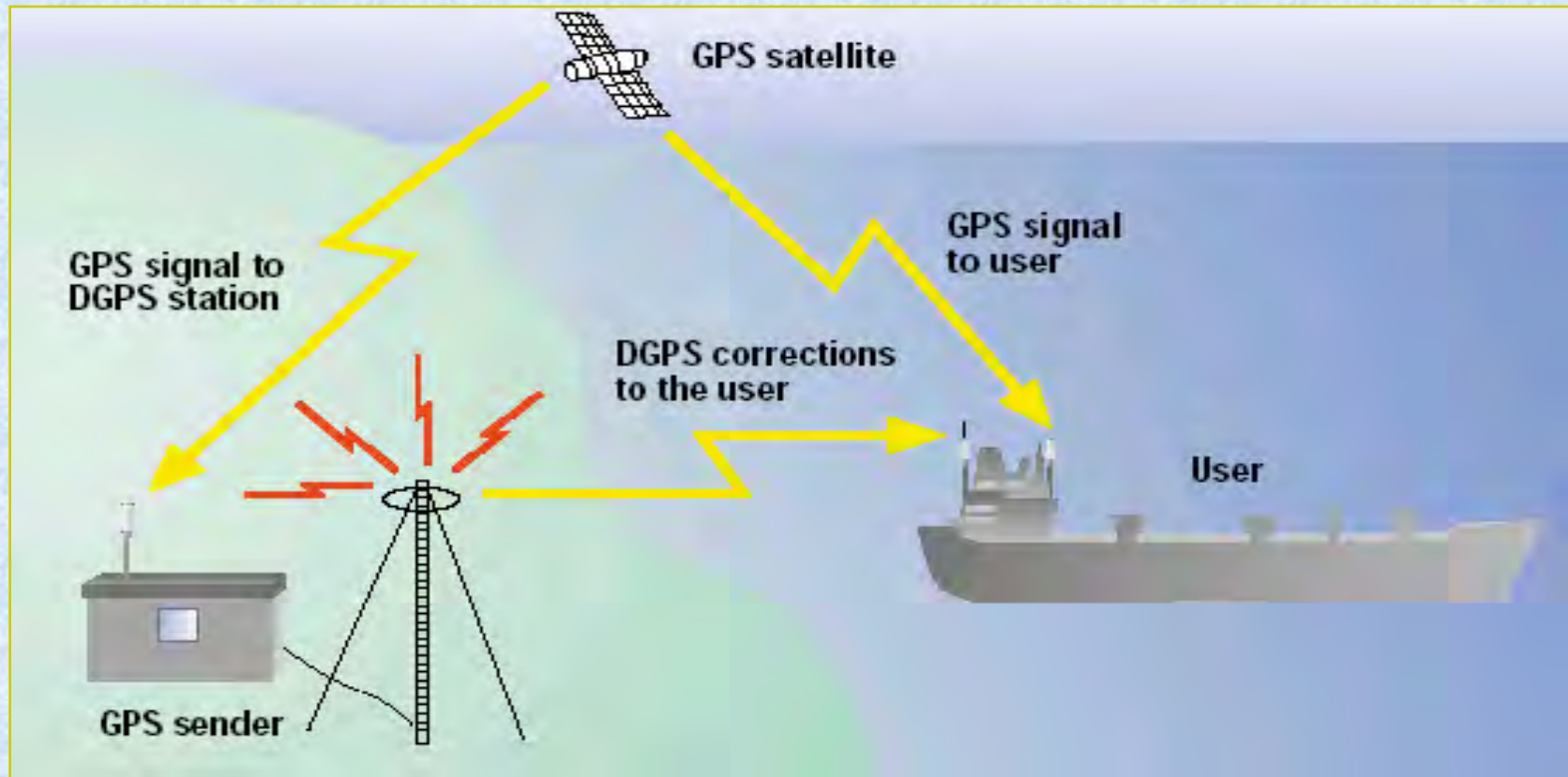
Survey Vessel in NW-2



Navigational Aids



The operating principle of the differential GPS





Permanent IWT terminal at Gaighat, Patna



Mobile Crane with Hook and Grab in NW-1

Low level jetty at Pandu



Loading of HSD at IWT Terminal, Silghat (NW-2)



Fly ash terminal at Budge-budge, Kolkata



Loading of IWT Vessel at Kolkata (NW-1)



Cargo Vessel in Brahmaputra (NW-2)



Cargo Vessel in Brahmaputra (NW-2)



Panoramic View of IWT Vessels at Patna



ODC movement in Brahmaputra (NW-2)



Project cargo for Allahabad bridge across NW-1



Some identified bulk cargo for IWT

NW-1

- Imported coal- Haldia to Farakka, Kahalgaon, Barh
- Fly ash- Kolkata/ Haldia to B'Desh
- Crude vegetable oil- Haldia to Varanasi
- Edible oil- Haldia/Kolkata to Patna/ Varanasi
- Stone chips- Pakur/ Sahibganj to Patna
- Cement- Allahabad to Patna, Kolkata
- Silica sand- Rajmahal to Kolkata
- Containers- Haldia/Kolkata to Patna
- Others- Foodgrains, **Fertilizers**, POL, Steel

Some bulk cargo for IWT

NW-2

- POL- Numaligarh to B'Desh, Kolkata
- Coal- Jogighopa to B'Desh, Kolkata
- Fly ash- Farakka/Kolkata to Guwahati
- Cement- Kolkata to Guwahati
- Jute- Guwahati/ Dhubri to Kolkata
- Tea- Guwahati to Haldia/ Kolkata
- Construction material- For NHPC power projects
- Containers- Haldia/Kolkata to Guwahati
- Others- Foodgrains, **Fertilisers**, Steel

Some identified bulk cargo for IWT

NW-3

- Cashew - Kollam to Kochi port
- Coir products - Alapuzha to Kochi port
- Chemicals for FACT plant
- Rare earth - Chavra to Kochi port
- Containers - To and from Kochi/ Valarpadam ports
- Water- Surrounding areas of Kochi
- Others – **Fertilizers**, foodgrains

Some identified bulk cargo for IWT

NW-4

- Coal from Godavari area (Singareni mines)
- Cement from Wazirabad area (Krishna river)
- Salt from Merkanam/ Puducherry areas
- Others - Rice, **Fertilizers**, Paper, Forest products etc

Some bulk cargo for IWT

NW-5

- Coal of Talcher mines to Dhamra & Paradip
- Paddy, Rice, Straw, Animal fodder, Jute, Coconut, **Fertilizer** and fish products