



## News Analysis (10 Jun, 2020)

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### QS World University Rankings 2021

#### Why in News

Recently, **QS World University Rankings 2021** shows a decline in the rankings of the **Indian Institutes of Technology (IITs)** and the **Indian Institute of Science (IISc)**.

Only the newer **IITs in Guwahati and Hyderabad** have shown some **improvement**.

#### QS World University Rankings

- **Quacquarelli Symonds (QS)** is a leading **global career and education network** for ambitious professionals looking to further their personal and professional development.
- QS develops and successfully **implements methods of comparative data collection and analysis** used to highlight institutions' strengths.
- The **'QS World University Rankings'** is an **annual publication of university rankings** which comprises the global overall and subject rankings.
- **Six parameters and their weightage for the evaluation:**
  - Academic Reputation (40%)
  - Employer Reputation (10%)
  - Faculty/Student Ratio (20%)
  - Citations per faculty (20%)
  - International Faculty Ratio (5%)
  - International Student Ratio (5%)

#### Key Points

- Only three educational institutes from India, the **IIT Bombay (172)**, **IISc Bengaluru (185)** and **IIT Delhi (193)** feature in the **top 200 list**.
- Despite the Centre's flagship **Institutes of Eminence (IoE) scheme** to boost the Indian presence in these global rankings, the **total number of Indian institutions** in the top 1,000 global list has **fallen from 24 to 21**.
- In **private universities**, **BITS Pilani and the Vellore Institute of Technology (VIT)** **have dropped** out of the top 1,000 list, but **OP Jindal Global University has climbed** to the 650-700 band in the rankings.

- Out of the six parameters, Indian institutions get **zero scores on the ratio of international faculty and students** while **scoring well on research impact**, measured through citations per faculty.
- India also **scores poorly on faculty-student ratio** because of counting only full-time faculty whereas American universities include PhD students who are teaching or are research assistants.
- Indian academics have focused on that **if a parameter comparing the cost of education to students is introduced**, Indian institutions would be among the world's top 50.
- Earlier in 2020, **IITs jointly decided to boycott the World University Rankings** released by the **Times Higher Education (THE)** questioning its methodology and transparency.
- One of the reasons for a drop in Indian universities' rank is **lack of sufficient efforts**.  
Other universities across the world are making **increasingly-intense efforts to enhance their educational offerings**.
- A **committee** of IIT directors has been formed to see **how Indian institutes can improve the perception about them abroad** and also make efforts to enhance the quality of standards within the country.
- **Suggestions:**
  - The government should launch a campaign for improving educational institutes, similar to **Incredible India** which promotes **tourism in India** and engages with the travellers.
  - **Success should be based on five pillars:**
    - Not-for-profit status.
    - Strong commitment to faculty hiring and research.
    - Focus on internationalisation.
    - Devotion to humanities and social sciences.
    - Drive to build a reputation through students and employers.

## **Institutions of Eminence Scheme**

- It is a government's scheme to provide the **regulatory architecture for setting up or upgrading** of 20 Institutions (10 from public sector and 10 from the private sector) as world-class teaching and research institutions called 'Institutions of Eminence'.
- **Objectives:**
  - **Excellence and Innovation:** To provide for higher education leading to excellence and innovations in such branches of knowledge as may be deemed fit at post-graduate, graduate and research degree levels.
  - **Specialization:** To engage in areas of specialization to make distinctive contributions to the objectives of the university education system.
  - **Global Rating:** To aim to be rated internationally for its teaching and research as a top hundred Institution in the world over time.
  - **Quality teaching and Research:** To provide for high quality teaching and research and for the advancement of knowledge and its dissemination.
- **Benefits:**
  - **Autonomy:** Institutes with IoE tag will be given **greater autonomy and freedom** to decide fees, course durations and governance structures.
  - **Grant:** The **public institutions** under IoE tag will receive a **government grant of Rs 1,000 crore**, while the **private institutions will not get any funding** under the scheme.

## Way Forward

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- The perception about India and its education standards play a major role which cannot be changed by an individual institution so all of the universities and institutes have to come together to tackle the issue.
- To regain lost ground, Indian higher education must find ways of increasing teaching capacity and of attracting more talented students and faculty across the world to study and work in India.

**Source: TH**

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## Microplastics in Deep Oceans

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### Why in News

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Recently, researchers have observed that **deep sea hotspots of biodiversity** are also **likely to be microplastic hotspots**.

- Although microplastics are known to spread on the global seafloor, the processes that control their dispersal and concentration in the deep sea remain largely unknown.
- The researchers have studied the **spatial distribution and ultimate settling position of the microplastics** and its **effects on the biodiversity hotspots** in the deep oceans.  
There are above-ground biodiversity hotspots like the tropical rain forests, alpine tundra, etc. Likewise, there are landforms beneath the sea that provide rich marine diversity which include **Coral reefs**, Sea mounts, etc.

### Microplastics

- Microplastics are small plastic pieces of **less than five millimeters** in size.
- It includes microbeads (solid plastic particles of less than one millimeter in their largest dimension) that are used in cosmetics and personal care products, industrial scrubbers which are used for aggressive blast cleaning, microfibers used in textiles and virgin resin pellets used in plastic manufacturing processes.
- Apart from cosmetics and personal care products, most of the microplastics result from the **breakdown of larger pieces of plastic** that were not recycled and broke up due to exposure to the sun or physical wear.
- Microplastics damage aquatic creatures including turtles and birds. It blocks digestive tracts, and alters feeding behavior. Subsequently, it reduces the growth and reproductive output in marine animals.

### Deep Sea

The deep sea or deep layer is the **lowest layer in the ocean**, existing below the thermocline and above the seabed, **at a depth of 1000 fathoms or more**.

- Fathom is a unit of length **equal to six feet** (1.8 metres).
- A thermocline is a thin but distinct layer in a large body of fluid in which temperature changes more rapidly with depth than it does in the layers above or below.
- In the ocean, the thermocline **divides the upper mixed layer from the calm deep water below**.

## Key Findings

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- **Role of Thermohaline Circulations:**

It has been observed that **thermohaline-driven circulations** can **control the distribution of microplastics** by creating **hotspots of accumulation**, analogous to current's role in depositing seafloor sediments.

- The ocean currents are usually driven by the winds in the upper 100 meters of the ocean's surface. However, ocean currents also flow thousands of meters below the surface.
- The ocean currents may be **classified based on their depth** as
  - **Surface Currents** : The surface currents constitute about 10 % of all the water in the ocean, these waters are the upper 400 m of the ocean.
  - **Deep Ocean Currents**: These currents make up the other 90 % of the ocean water. These currents are driven by **differences in the water's density**, which is controlled by **temperature (thermo) and salinity (haline)**. This process is known as **thermohaline circulation**.
- In the Earth's polar regions ocean water gets very cold, forming sea ice. As a consequence the surrounding seawater gets saltier, because when sea ice forms, the salt is left behind.
- As the seawater gets saltier, its density increases, and it starts to sink. Surface water is pulled in to replace the sinking water, which in turn eventually becomes cold and salty enough to sink. This initiates the deep-ocean currents driving the global conveyor belt.

- **Vulnerability of Benthos:**

Further, these thermohaline currents **supply oxygen and nutrients** to deep-sea **benthos**, so deepsea biodiversity hotspots are also likely to be microplastic hotspots.

Benthos is the community of organisms that live on, in, or near the seabed, river, lake, or stream bottom, also known as the benthic zone.

## Way Forward

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- There is a need to prioritise the **reduction of single-use plastic** such as multi-layer packaging, bread bags, food wrap, and protective packaging which are major and dangerous sources for plastic pollution.
- The **economical support** including tax rebates, research and development funds, technology incubation, public-private partnerships and support to projects that recycle single-use items and turn waste into a resource can be enforced.
- Also, the **expansion of the use of biodegradable plastics** or even edible plastics made from various materials such as bagasse (the residue after extracting juice from sugarcane), corn starch, and grain flour should be encouraged.

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## Gross Value Added

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### Why in News

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According to the provisional data released by the **National Statistical Office (NSO)**, the **Gross Value Added (GVA)** estimates for the first three quarters of financial year 2019-20, revealed significant revisions from what the NSO had shared back in February 2020.

### Key Points

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- In February, the NSO had pegged year-on-year GVA growth rates in the first three quarters at 5.4%, 4.8% and 4.5%, respectively.
- However, the latest estimates saw significant downward revisions in the GVA data pertaining to the first three quarters to 4.8%, 4.3% and 3.5% respectively.
- The revisions combined with dull performance in the fourth quarter ultimately **lowered the overall annual GVA growth estimate** for 2019-20 by as much as 1% point to 3.9%, from the 4.9% forecast in February.
- The significant revisions in GVA data point to a **deeper weakness in the service sectors**.
  - The growth estimates for the **largest services sector, Financial, Real Estate and Professional Services**, have been reduced sharply.
    - Q1, Q2 and Q3 growth has been cut from 6.9%, 7.1% and 7.3%, respectively to 6%, 6% and 3.3%, respectively.
    - Financial, Real Estate and Professional Services **contributes almost one-fourth of the overall GVA**.
  - Trade, Hotels, Transport, Communications and services related to Broadcasting also saw a significant reduction in estimates.
    - Q1, Q2 and Q3 growth has been cut from 5.7%, 5.8% and 5.9%, respectively to 3.5%, 4.1% and 4.3%, respectively.
    - These services contribute almost 20% to GVA and are the **second largest component of GVA**.
- However, the revisions show two other key sectors, **Agriculture and Public Administration in a positive light**.

The Public Administration sector's Q1, Q2 and Q3 growth have been revised from 8.7%, 10.1% and 9.7%, respectively, to 7.7%, 10.9% and 10.9%.

### Gross Value Added

- In 2015, India opted to make major changes to its compilation of national accounts and decided to bring the whole process into conformity with the **United Nations System of National Accounts (SNA) of 2008**.
  - The SNA is the internationally agreed standard set of recommendations on how to compile measures of economic activity.
  - It describes a coherent, consistent and integrated set of macroeconomic accounts in the context of a set of internationally agreed concepts, definitions, classifications and accounting rules.

- As per the SNA, **GVA is defined as the value of output minus the value of intermediate consumption** and is a **measure of the contribution to growth made by an individual producer, industry or sector.**

It provides the **rupee value** for the number of goods and services produced in an economy after **deducting the cost of inputs and raw materials** that have gone into the production of those goods and services.

- It can be described as the **main entry on the income side of the nation's accounting balance sheet**, and from an economics perspective **represents the supply side.**
- At the macro level, from a **national accounting perspective**, GVA is the sum of a country's GDP and net of subsidies and taxes in the economy.

**Gross Value Added = GDP + subsidies on products - taxes on products**

- Earlier, India had been measuring GVA at '**factor cost**' till the new methodology was adopted in which GVA at '**basic prices**' became the primary measure of economic output.
  - GVA at basic prices will **include production taxes** and **exclude production subsidies.**
  - GVA at factor cost included no taxes and excluded no subsidies.
- The **base year** has also been shifted to **2011-12** from the earlier 2004-05.
- The NSO provides **both quarterly and annual estimates of output** of GVA. It provides sectoral classification data on **eight broad categories** that includes **both goods produced and services provided** in the economy. These are:
  - Agriculture, Forestry and Fishing.
  - Mining and Quarrying.
  - Manufacturing.
  - Electricity, Gas, Water Supply and other Utility Services.
  - Construction.
  - Trade, Hotels, Transport, Communication and Services related to Broadcasting.
  - Financial, Real Estate and Professional Services.
  - Public Administration, Defence and other Services.

## Importance of GVA

- While GVA gives a picture of the state of economic activity from the **producers' side or supply side**, the GDP gives the picture from the **consumers' side or demand perspective.**
  - Both measures need not match because of the difference in treatment of net taxes.
  - **GDP** is the sum of private consumption, gross investment in the economy, government investment, government spending and net foreign trade (the difference between exports and imports).
  - **GDP = private consumption + gross investment + government investment + government spending + (exports-imports)**
- GVA is considered a **better gauge of the economy.** GDP fails to gauge the real economic scenario because a sharp increase in the output can be due to higher tax collections which could be on account of better compliance or coverage, rather than the real output situation.
- A **sector-wise breakdown provided by the GVA measure helps policymakers** decide which sectors need incentives or stimulus and accordingly formulate sector-specific policies.
 

But GDP is a key measure when it comes to making cross-country analysis and comparing the incomes of different economies.

- From a **global data standards and uniformity perspective**, GVA is an integral and necessary parameter in measuring a nation's economic performance.  
Any country which seeks to **attract capital and investment from overseas does need to conform to the global best practices** in national income accounting.

### Issues with GVA

- The accuracy of GVA is heavily dependent on the sourcing of data and the accuracy of the various data sources.
- GVA is as susceptible to vulnerabilities from the use of inappropriate or flawed methodologies as any other measure.

### Source: TH

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## Water Dispute Between Telangana and Andhra Pradesh

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### Why in News

Recently, the Union government has decided **to take the stock of water utilisation** from the **Krishna and Godavari rivers** following the filing of complaints against each other by Telangana and Andhra Pradesh governments.

### Key Points

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- **Water Dispute:**
  - Telangana and Andhra Pradesh share stretches of the Krishna and the Godavari and own their tributaries.
  - Both states **have proposed several new projects without getting clearance** from the **river boards, the Central Water Commission and the Apex Council**, as mandated by the Andhra Pradesh Reorganisation Act, 2014.
    - The Andhra Pradesh Reorganisation Act, 2014 **mandates for constitution of an Apex Council by Central Government** for the supervision of the functioning of the Godavari River Management Board and Krishna River Management Board.
    - The Apex Council **comprises the Union Water Resources Minister and the Chief Ministers of** Telangana and Andhra Pradesh.
  - The Andhra Pradesh government's proposal to increase the utilisation of the Krishna water from a section of the river above the **Srisailem Reservoir** led to the Telangana government filing a complaint against Andhra Pradesh.

The Srisailem reservoir is constructed across the **Krishna River in Andhra Pradesh**. It is located in the **Nallamala hills**.
  - The Andhra Pradesh government retaliated with its own complaints saying that **Palamuru-Rangareddy, Dindi Lift Irrigation Schemes on the Krishna river and Kaleshwaram, Tupakulagudem schemes and a few barrages proposed across the Godavari** are all new projects.

- **Krishna Water Dispute Tribunal:**

- **Two tribunals** have been constituted to resolve the **disputes of the Krishna water**.
- **Andhra Pradesh has countered the second Krishna Water Dispute Tribunal (KWDT) order** issued by Justice Brijesh Kumar in 2010.

The Brijesh Kumar Tribunal has allocated 81 thousand million cubic feet (tmcft) of surplus water to Maharashtra, 177 tmcft to Karnataka and only 196 tmcft to Andhra Pradesh.

- After the creation of Telangana as a separate state in 2014, **Andhra Pradesh is asking to include Telangana as a separate party at the KWDT** and that the allocation of Krishna waters be reworked among four states, instead of three.

It has challenged the order of the Brijesh Kumar Tribunal in the Supreme Court.

- **Godavari Water Dispute Tribunal:**

- The **Godavari Water Dispute Tribunal headed by Justice Bachawat** was constituted by the Government in April, 1969.
  - The **tribunal was tasked to look after the dispute over Godavari river** between Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Odisha, and Karnataka over the sharing of the Godavari river water.
  - The Bachawat Tribunal gave its final award in 1980.
  - Accordingly, each State was free to utilise the flow in Godavari and its tributaries up to a certain level.
  - Thus, Andhra Pradesh decided to divert 80 tmcft of Godavari water from Polavaram to Krishna river, upstream of Vijayawada, so that it could be shared with Karnataka and Maharashtra.
- Once Telangana came into existence in 2014, **the Godavari water and, more specifically, the Polavaram project became the bone of contention** between Telangana and Andhra Pradesh.
  - While the project will take care of the irrigation needs of the Godavari districts of Andhra Pradesh, Telangana fears it would submerge many villages in its Khammam district.
  - Odisha too has expressed its reservations over the Polavaram dam's design.

- **Union Government's Move:**

- It has asked the Krishna and Godavari River Management Boards **to procure the details of the irrigation projects on these rivers**, including from Maharashtra and Karnataka and submit them to the Centre in a month.
- The **main objective** of the exercise appears to be to assess whether surplus water will be available for the new projects in Telangana and Andhra Pradesh, in the light of the disputes.

## Inter-State Water Disputes

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- **Article 262 of the Constitution** provides for the adjudication of **inter-state water disputes**.

- Under this, **Parliament may by law provide for the adjudication of any dispute or complaint** with respect to the use, distribution and control of waters of any inter-state river and river valley.
- Parliament may also provide that **neither the Supreme Court nor any other court is to exercise jurisdiction** in respect of any such dispute or complaint.



- The Parliament has enacted the two laws, the **River Boards Act (1956)** and the **Inter-State Water Disputes Act (1956)**.
  - The River Boards Act provides for the establishment of river boards by the **Central government** for the regulation and development of inter-state river and river valleys.
    - A River Board is established on the request of state governments concerned to advise them.
  - The Inter-State Water Disputes Act empowers the **Central government to set up an ad hoc tribunal for the adjudication of a dispute between two or more states** in relation to the waters of an inter-state river or river valley.
    - The **decision of the tribunal is final and binding on the parties** to the dispute.
    - Neither the Supreme Court nor any other court is to have jurisdiction in respect of any water dispute which may be referred to such a tribunal under this Act.

### Godavari River

- **Source:** Godavari river rises from Trimbakeshwar near Nasik in Maharashtra and flows for a length of about 1465 km before outfalling into the Bay of Bengal.
- **Drainage Basin:** The Godavari basin extends over states of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh and Odisha in addition to smaller parts in Madhya Pradesh, Karnataka and Union territory of Puducherry.
- **Tributaries:** Pravara, Purna, Manjra, Penganga, Wardha, Wainganga, Pranhita (combined flow of Wainganga, Penganga, Wardha), Indravati, Maner and the Sabri

### Krishna River

- **Source:** It originates near Mahabaleshwar (Satara) in Maharashtra. It is the second biggest river in peninsular India after the Godavari River.
- **Drainage:** It runs from four states Maharashtra (303 km), North Karnataka (480 km) and the rest of its 1300 km journey in Telangana and Andhra Pradesh before it empties into the Bay of Bengal.
- **Tributaries:** Tungabhadra, Mallaprabha, Koyna, Bhima, Ghataprabha, Yerla, Warna, Dindi, Musi and Dudhganga.

### Source: TH

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## Vamsadhara River Water Dispute

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### Why in News

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The **Chief Ministers of Andhra Pradesh and Odisha** will hold talks to clear out all differences with regard to the **sharing of Vamsadhara river waters**.

Andhra Pradesh wants to build the **Neradi bridge** across the river which will be possible only after Odisha's consent.

### Key Points

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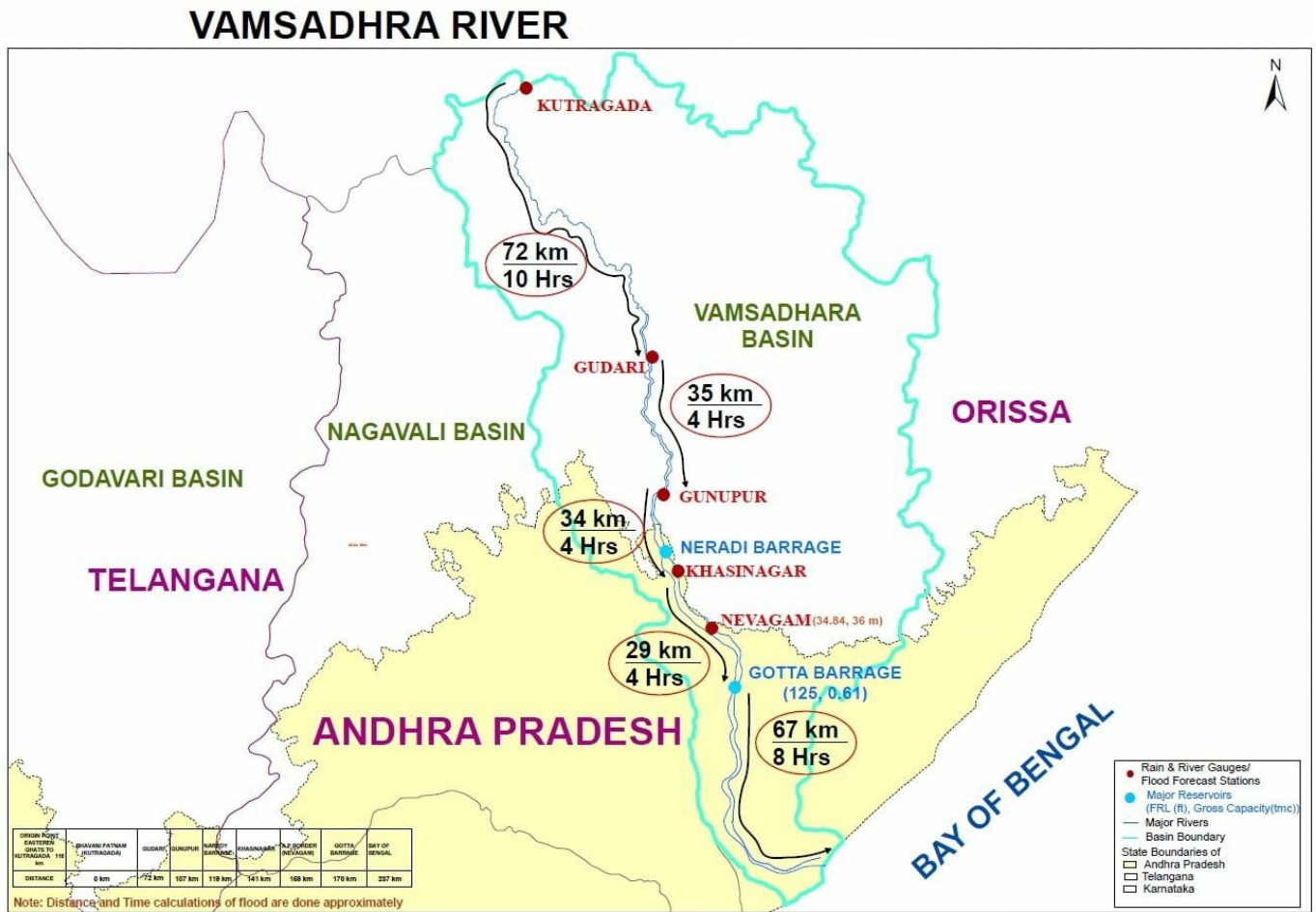
- Andhra Pradesh also wants to complete the **inter-linking of its Nagavali river with the Vamsadhara** and expand the **Madduvalasa Reservoir project** soon.  
Madduvalasa Project is a **Medium Irrigation Project** with a reservoir across **Suvarnamukhi** river, a **tributary of Nagavali** river.
- **Agriculture is the only assured economic activity** for the people living in the backward region and in the **absence of rapid industrialisation**, there is a need to **concentrate on irrigation projects** to make agriculture a viable activity.
- **Background:**
  - In **February 2006**, Odisha sent a complaint to the Central Government under **Section 3 of the Inter-State River Water Disputes (ISRWD) Act, 1956** regarding its water disputes with Andhra Pradesh pertaining to **Inter-State River Vamsadhara**. It demanded for the constitution of an **Inter-State Water Disputes Tribunal** for adjudication.
  - **Grievances of Orissa:**
    - **Adverse effect** of undertaking the **construction of a canal** (called a flood flow canal at Katragada, Andhra Pradesh) taking off from the river Vamsadhara.  
The flood flow canal would result in **drying up the existing river bed** and consequent shifting of the river **affecting the groundwater table**.
    - **Failure of Andhra Pradesh** to implement the terms of the inter-state agreement relating to use, distribution and control of waters of vamsadhara and its valley.
    - Odisha also raised the issue of **scientific assessment** of available water in Vamsadhara at Katragada and Gotta Barrage, Andhra Pradesh and the basis for sharing the available water.

Major Inter-State River Disputes	
River (s)	States
Ravi and Beas	Punjab, Haryana, Rajasthan
Narmada	Madhya Pradesh, Gujarat, Maharashtra, Rajasthan
Krishna	Maharashtra, Andhra Pradesh, Karnataka, Telangana
Vamsadhara	Andhra Pradesh & Odisha
Cauvery	Kerala, Karnataka, Tamil Nadu and Puducherry
Godavari	Maharashtra, Andhra Pradesh, Telangana, Karnataka, Madhya Pradesh, Odisha
Mahanadi	Chhattisgarh, Odisha
Mahadayi	Goa, Maharashtra, Karnataka
Periyar	Tamil Nadu, Kerala

### Vamsadhara River

- It is an **east-flowing** river which originates in **Kalahandi district of Odisha**, flows in Odisha, along its boundary with Andhra Pradesh and finally **joins the Bay of Bengal at Kalingapatnam, Andhra Pradesh**.

- It is the **main river of north-eastern Andhra** region and the **Boddepalli Rajagopala Rao Project** was constructed on it to meet the irrigation needs of the region.



## Production of Saffron and Heeng in India

### Why in News

The Institute of Himalayan Bioresource Technology (CSIR-IHBT) and the Government of Himachal Pradesh, have jointly decided **to increase the production of the two spices** namely, **Saffron and Heeng (asafoetida)**.

- Under this plan, IHBT will be introducing **new varieties of saffron and heeng from the exporting countries** and will be standardized under Indian conditions.
- IHBT is the only laboratory of the **Council of Scientific and Industrial Research (CSIR)** in Himachal Pradesh.

### Key Points

- **Saffron Production in India:**
  - In India, the annual demand for **Saffron spice is 100 tons per year** but its average production is about **6-7 tons per year**. Hence a large amount of Saffron is being **imported**.
  - At present, about **2825 hectares of land** is under **cultivation of Saffron in Jammu and Kashmir**.
    - Recently, the Kashmir saffron got **Geographical Indication (GI) tag status**.
    - Pampore Saffron Heritage of Kashmir is one of the **Globally Important Agricultural Heritage systems (GIAHS) recognised sites** in India.
    - GIAHS recognised sites are traditional agricultural systems that represent models of sustainable agricultural production. The other two sites in India are **Kuttanad Below Sea Level Farming of Kerala and Koraput Traditional Agriculture of Odisha**.
  - IHBT has also introduced its cultivation in **non-traditional areas of Himachal Pradesh and Uttarakhand**.
  - The Institute has also developed tissue-culture protocol for the production of disease-free corms.
- **Heeng Imports in India:**
  - Heeng is a **perennial** plant and it produces resin from the roots after **five years of plantation**.
  - It can be grown in **unutilized sloppy land of cold desert** regions.
  - There is **no production** of heeng in India and currently about 1200 tons of raw heeng worth Rs 600 crore is being **imported** from **Afghanistan, Iran, and Uzbekistan**.
- **Benefits:**
  - The introduction of IHBT developed crops of heeng and saffron is expected to **reduce the import** of these spices.
  - It also targets to **cover a total of 750 acres** of land under these crops in the Himachal Pradesh in the **next five years** which will create livelihoods for the farmers in the state.
  - CSIR-IHBT is also expected to provide transfer of innovations by means of capacity building, skill development, impart training to state agriculture department officers and farmers, and set up seed production centres of Saffron and heeng in the state.

## Way Forward

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- The plan will provide technical know-how to the farmers, and set up seed production centres of Saffron and heeng, respectively, in the state. Thus it will help to create a **multi dimensional development platform** in the state.
- The reduction of imports will also help to **diversify the agricultural sector**. It will also enforce **Atmanirbhar Bharat Abhiyan in the agricultural sector**.

**Source:PIB**

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