1.Explain the various sources of irrigation in Telangana. How have inter-state river water disputes impacted irrigation development in the state?

Introduction

Telangana is one of the most agriculturally dynamic states in India, with a **Net Irrigated Area (NIA) of 71.71 lakh acres** and a **Gross Irrigated Area of 113.27 lakh acres**, accounting for **61.3% of the Gross Sown Area** (2019–20). The state's irrigation system is supported by diverse sources, yet its full potential remains constrained by inter-state river water disputes.

Major Sources of Irrigation in Telangana

1. **Canal Irrigation**
   - Telangana has developed extensive canal networks fed by the Krishna and Godavari rivers.
   - **Nagarjuna Sagar Canal**: Irrigates parts of Nalgonda, Khammam, and Warangal.
   - **Sriram Sagar Canal**: Supplies water to Nizamabad, Adilabad, and Karimnagar.
   - **Lower Manair Dam Canal**: Provides irrigation in and around Karimnagar.
   - The **Kaleshwaram Lift Irrigation Scheme** has significantly enhanced canal irrigation coverage.

2. **Tank Irrigation**
   - Telangana has the **largest tank-irrigated area in India**.
   - Traditional tanks are being revived through **Mission Kakatiya**, restoring thousands of minor irrigation tanks and ensuring community-based water security.

3. **Well Irrigation (Groundwater)**
   - Widely practiced in regions with limited surface water availability.
   - Utilizes shallow and deep wells ranging from **3 to 15 meters**, especially in areas lacking major canal connectivity.

4. **Lift Irrigation**
   - A modern method used to pump water to higher terrains.
   - The **Kaleshwaram Lift Irrigation Project** is one of the **largest multi-stage lift irrigation projects** in the world, serving multiple districts in northern and eastern Telangana.

Impact of Inter-State River Water Disputes

Telangana shares two major rivers—**Krishna and Godavari**—with Andhra Pradesh, Karnataka, Maharashtra, and Odisha, leading to disputes that have hindered irrigation development.

1. **Krishna Water Dispute**
   - Governed by **KWDT-I and KWDT-II**, Telangana was allocated **299 TMC**, while Andhra Pradesh received **512 TMC** post-bifurcation.
   - Disputes continue over project approvals and water release mechanisms via **Krishna River Management Board (KRMB)**.

2. **Godavari Water Dispute**
   - Despite agreements, disputes persist over projects like **Medigadda (Kaleshwaram)**, opposed by Andhra Pradesh.
   - Telangana, in turn, objects to **Polavaram** and **Pattiseema**, citing submergence and allocation concerns.
   - These disputes delay project execution, reduce water availability, and impact crop planning.

Conclusion

While Telangana has made commendable progress in expanding irrigation through innovative and traditional means, **inter-state water disputes remain a critical bottleneck**. Resolving these through cooperative federalism, legal clarity, and transparent water-sharing frameworks is essential for sustainable agricultural development and **inclusive rural prosperity in Telangana**.

2. Discuss the spatial distribution of tribal communities in Telangana. What are the major challenges do these communities continue to face in the context of modern development?

Introduction

As per **Census 2011**, Telangana is home to **31.78 lakh tribal people**, constituting approximately **9%** of the state's population. These Scheduled Tribes are spread across both hilly and plain regions, including **Particularly Vulnerable Tribal Groups (PVTGs)** who continue to rely on traditional lifestyles. However, the march of modern development has brought with it significant socio-economic challenges for these communities.

Spatial Distribution of Tribal Communities in Telangana

1. **Koya**
   - **Numerically significant** Adivasi group (~3.81 lakh), concentrated in **Bhadradri Kothagudem, Mulugu, Jayashankar Bhupalpally**, and **Mahabubabad** districts.
   - Inhabit slopes of the **Eastern Ghats**, with deep cultural ties to the landscape.

2. **Gond**
   - Population of **2.97 lakh**, primarily in **Adilabad, Mancherial, and Komaram Bheem-Asifabad** districts.
   - Practice shifting (jhum) cultivation and rotational settlement patterns.

3. **Pardhan, Andh, Kolam**
   - Found in northern Telangana districts (**Adilabad, Asifabad**).
   - **Kolams** are the **largest PVTG**, with 0.44 lakh population.

4. **Chenchu & Thoti (PVTGs)**
   - **Chenchus** inhabit the **Nallamala forests**, especially in **Nagarkurnool and Nalgonda**.
   - **Thotis** are a minor PVTG in **Adilabad**, with only 4,000 population.

5. **Lambadas (Banjaras)**
   - The **largest tribal group** in Telangana (~20.44 lakh), scattered across **all districts**, especially **Nizamabad, Mahbubnagar, and Medak**.

6. **Yerukala**
   - Inhabit **plains and peri-urban areas** near **Hyderabad and Rangareddy**, with a population of **1.44 lakh**

Challenges Faced by Tribal Communities

1. **Basic Amenities Deficit**
   - Poor access to **clean drinking water, sanitation, electricity**, and **road connectivity**, especially in **Mulugu, Nalgonda, and Kothagudem** districts.
   - (Ref: Mission Antyodaya Survey, MoTA)

2. **Displacement & Land Alienation**
   - Development projects like **Mallannasagar** and industrial zones often result in eviction without adequate rehabilitation.
   - Erodes **cultural and livelihood security**.

3. **Healthcare Inaccessibility**
   - Limited primary health centers, shortage of medical staff, and logistical difficulties in reaching remote areas.
   - Example: A pregnant tribal woman carried on a **palanquin in Kothagudem**.

4. **Educational Disparities**
   - High **dropout rate (approx. 35%)** among ST children due to lack of infrastructure and engagement.
   - Tribal children, such as **Chenchus**, are often seen **working in brick kilns**.

5. **Forest Rights & Conservation Conflicts**
   - Tribals are often **wrongly viewed as encroachers**, despite **dependence on forests** for subsistence.
   - Forest governance mechanisms often **ignore traditional knowledge.**

Conclusion

The development trajectory in Telangana must align with the **rights, identity, and needs** of tribal communities. Ensuring participatory governance, securing forest rights, expanding welfare infrastructure, and tailoring education and livelihood schemes can bridge the gap between tradition and modernity—thereby making development **inclusive and just**.