

# 2025 Student Research Case Study Challenge Online Encyclopedia Entry: Tarrodan

## A Dam Challenge January 17, 2025

Some of the following information was created with the assistance of Copilot, a generative AI from Microsoft, and ChatGPT for Business, a generative AI from OpenAI, during October–December 2024 in response to numerous prompts and specifications provided by the Society of Actuaries Research Institute 2025 Student Research Case Study development team. The resulting output has been edited for style and content.

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### Tarrodan

Tarrodan is a country that in 2023 spanned approximately 2 million square kilometers and had a population of approximately 95 million people.

#### Flag:



#### **GEOGRAPHY**

#### Capital: Tarrodo

Tarrodan is divided into three distinct geographical and political regions.

• Flumevale

Known for its expansive forests, winding rivers, and fertile agricultural plains, Flumevale is often referred to as "The Heartland of Tarrodan." The Great Flume River serves as a vital artery for transportation and irrigation. Crops such as golden wheat and ambervinia berries thrive here.

#### • Lyndrassia

Dominated by rolling hills and the towering Lyndrian Peaks, capped with snow year-round, Lyndrassia is rich in mineral deposits and supports a strong mining industry. The serene meadows at the base of the mountains are dotted with quaint villages and vibrant alpine flora.

Navaldia

This coastal region is defined by its rugged cliffs, sandy beaches, and bustling harbors. The Ruby Wave Archipelago lies just offshore, known for its rich marine biodiversity and vibrant coral reefs. This region is a hub for shipbuilding, fishing, and trade, with its port cities often buzzing with activity.

#### **HISTORY**

Tarrodan's history is a tale of unity forged from diversity.

- Early Tribes and Unification: Over 1,200 years ago, the Tarrosian tribes, each with distinct cultures, came together under the leadership of Vehlan the Visionary to resist external threats. This unification laid the foundation for the nation.
- The Treaty of Lyndrassia (834 CE): After decades of internal conflict, this treaty established a framework for regional autonomy under a central government.
- The Maritime Renaissance (1450–1550 CE): Navaldia's fleets expanded Tarrodan's influence through exploration and trade, bringing wealth and fostering a golden age of art and science.
- Modernization (19th–20th centuries): The adoption of the Qalkoon currency and the development of national railways connected the regions and promoted economic integration. Recent decades have seen a focus on renewable energy and digital innovation.

#### CULTURE

#### Motto: "Unity in Diversity, Strength in Harmony"

Official Languages: Tarrosian (national); Flumish, Lyndral (regional dialects)

Tarrodan's culture is deeply rooted in the unique traditions of its three regions while embracing national unity.

- Cuisine
  - **Flumevale**: Known for hearty stews and fresh produce. Dishes often include root vegetables, grains, and slow-roasted meats.
  - **Lyndrassia**: Famous for its spiced breads, mountain honey, and dishes featuring the Meadow Glimmer Hare, served during the Winterlight Festival.
  - **Navaldia**: Renowned for its seafood, with dishes like spiced Glitterfinstew and grilled Ruby Wave Navalarafish.
- Art and Literature: The country's murals, often depicting scenes from the *Legends of Vehlan*, are celebrated for their intricate designs. Epic poetry is a cornerstone of Tarrosian literature, with oral storytelling still practiced in rural areas.
- Music and Dance: Traditional music, centered around the tarloon, is often accompanied by regional dances. Lyndrassian folk dances, characterized by intricate footwork, are performed at festivals and celebrations.

#### **NATIONAL CELEBRATIONS**

- Unity Day (March 15): Marked by parades, communal feasts, and performances, it commemorates the founding of Tarrodan.
- **Ruby Wave Festival (June)**: In Navaldia, sailing races, seafood feasts, and beach bonfires celebrate maritime heritage.
- Lyndrassian Winterlight Festival (December): Villages are illuminated with lanterns and torches, and traditional music fills the air.

#### **FLORA AND FAUNA**

Tarrodan's ecosystems are diverse and vibrant:

- Flumevale
  - o Flora: ancient flume trees, glowing lumina blossoms, and golden ambervinia.
  - o Fauna: river glide platypus, Flumevalian lynx, and migratory skyglider herons.
- Lyndrassia
  - o Flora: snow emberflowers and everbright pines with glowing resin.
  - o Fauna: majestic lyndrax, frostwing eagles, Lyndrassian penguins, and Meadow Glimmer Hares.
- Navaldia
  - o Flora: coastal mangroves, sea thistles, and ruby orchids found on the archipelago.
  - o Fauna: Navaldian dolphins, coral eels, and crimson wing gulls.

Sustainability efforts include protected areas like the Ruby Wave Marine Reserve and Great Flume Sanctuary.

#### **NATURAL DISASTERS**

Tarrodan faces several natural challenges:

- Flumevale: Periodic river flooding during spring thaws and heavy rains.
- Lyndrassia: Experiences avalanches during harsh winters and occasional earthquakes.
- Navaldia: Vulnerable to tropical storms and tsunamis due to its coastal location.

Disaster preparedness programs, early warning systems, and resilient infrastructure help mitigate these risks.

#### TRANSPORTATION

- **Roads and Highways**: The Unity Highway connects major cities, while rural areas rely on well-maintained regional roads.
- **Railways**: High-speed rail links Tarrodo to all regions. Scenic mountain railways in Lyndrassia are popular with tourists.
- Waterways: The Great Flume River supports barge transport, while Navaldia's ports facilitate international trade.
- Air Travel: Tarrodo International Aerodrome serves as the country's primary airport, with smaller regional airports in Navaldia and Lyndrassia.

Eco-friendly initiatives, such as solar-powered boats and electric vehicle lanes, are widespread.

#### **SPORTS AND LEISURE**

#### Sports

- Traditional: Flumevale River Racing, Mountain Hurl in Lyndrassia, and wave sailing in Navaldia reflect the nation's heritage.
- Modern: League Ball, a fast-paced team sport, is the most popular national game.

#### Leisure Activities

- Outdoor activities like hiking, snorkeling, and eco-camping are widely enjoyed.
- Festivals like Unity Day and the Ruby Wave Festival showcase Tarrodan's cultural vibrancy.

#### **POPULATION STATISTICS**

Year	Flumevale	Lyndrassia	Navaldia	Tarrodan
2019	45,363,514	7,067,855	39,808,697	92,240,066
2020	45,502,051	7,097,789	40,175,188	92,775,028
2021	45,651,175	7,131,024	40,565,887	93,348,086
2022	45,599,000	7,157,446	40,953,108	93,709,554
2023	45,311,937	7,239,138	42,148,205	94,699,280

#### Population Density (square kilometers, 2023)

- Flumevale: 67.4
- Lyndrassia: 13.0
- Navaldia: 53.2

#### Population Distribution (2023)

Year	Flumevale	Lyndrassia	Navaldia
Urban (>50,000)	88.2%	52.4%	38.8%
Urban (<50,000)	5.7%	16.0%	23.9%
Rural	6.1%	31.6%	37.3%

#### **HOUSING STATISTICS**

#### Distribution of Number of Housing Units by Value

Value	Flumevale	Lyndrassia	Navaldia	Tarrodan
Less than Q50,000	446,720	206,960	871,223	1,524,903
Q50,000 to Q99,999	552,111	414,955	1,593,970	2,561,036
Q100,000 to Q149,999	887,815	471,356	2,169,919	3,529,090
Q150,000 to Q199,999	1,219,671	448,956	2,505,863	4,174,490
Q200,000 to Q299,999	2,730,435	572,280	3,816,207	7,118,922
Q300,000 to Q499,999	2,521,934	532,740	3,189,802	6,244,476
Q500,000 to Q999,999	5,165,736	268,786	1,825,774	7,260,296
Q1,000,000 or more	2,386,698	51,349	351,150	2,789,197
Total	15,911,120	2,967,382	16,323,908	35,202,410

#### ECONOMY

Tarrodan's economy is diverse, with key sectors including agriculture, maritime trade, and mining. Renewable energy and technological innovation are growing sectors, ensuring a sustainable future.

Currency: Qalkoon (Q), subdivided into 100 gales

#### Exchange Rate, January 17, 2025

- 1.000 Qalkoon (Q) = 0.996 Euro (€)
- 1.000 Qalkoon (Q) =1.048 U.S. Dollar (\$)

#### Nominal Gross Domestic Product (GDP) (Q millions)

Year	Flumevale	Lyndrassia	Navaldia	Tarrodan
2019	3,306,924	369,632	2,544,348	6,220,904
2020	3,313,625	370,374	2,460,436	6,144,435
2021	3,691,682	407,195	2,798,390	6,897,267
2022	3,963,845	447,382	3,202,171	7,613,398
2023	4,197,489	480,201	3,396,363	8,074,053

#### Distribution of Gross Domestic Product (GDP) by Industry (2023)

Industry	Flumevale	Lyndrassia	Navaldia
Agriculture	5.9%	1.9%	0.7%
Entertainment	4.7%	4.6%	3.6%
Construction	4.1%	4.9%	5.9%
Education	7.6%	10.1%	9.0%
Finance	18.8%	15.5%	18.8%
Information	7.5%	3.2%	3.9%
Manufacturing	10.0%	10.9%	11.3%
Mining	0.7%	8.8%	0.7%
Professional Services	12.2%	10.2%	12.9%
Retail	6.0%	6.9%	6.2%
Transportation	3.3%	3.7%	5.5%
Utilities	1.4%	1.5%	1.8%
Trade	5.4%	6.7%	8.8%
Government	10.6%	8.7%	9.0%
Other	1.8%	2.4%	1.9%

#### **SUMMARY**

Tarrodan is a harmonious blend of tradition and modernity, where cultural richness meets natural beauty. Its fertile lands, vibrant coasts, and majestic mountains provide a unique setting for a thriving and resilient society, united in diversity.

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