



International Year
of Cooperatives

Subak Bali:
A Traditional Cooperation
in Harmony with People,
Nature and God.

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Introduction

- 9th - 11th Century
- „Subak“ → traditional irrigation system
- Traditional community-based organization that manages and distributes water for irrigation processes.
- Agricultural cooperative that incorporates Tri Hita Karana; a socio-agrarian-religious Hindu principle.

RQ:

How do culture and belief sustain Subak Bali’s cooperative system, and how does this influence its contribution to sustainability and the UN Sustainable Development Goals (SDGs)

Case description

- Traditional irrigation system in Bali, Indonesia.
- Faith-based organization
- Includes 50 – 400 Farmers.
- Functionally a cooperative; not registered under Indonesian cooperative law
- Awig-awig under customary law
- Recognized as a UNESCO World Heritage
- Lake Batur, Pura Ulun Danu Batur, Jatiluwih Rice terrace, Taman Ayun Temple, Pakerisan Watershed

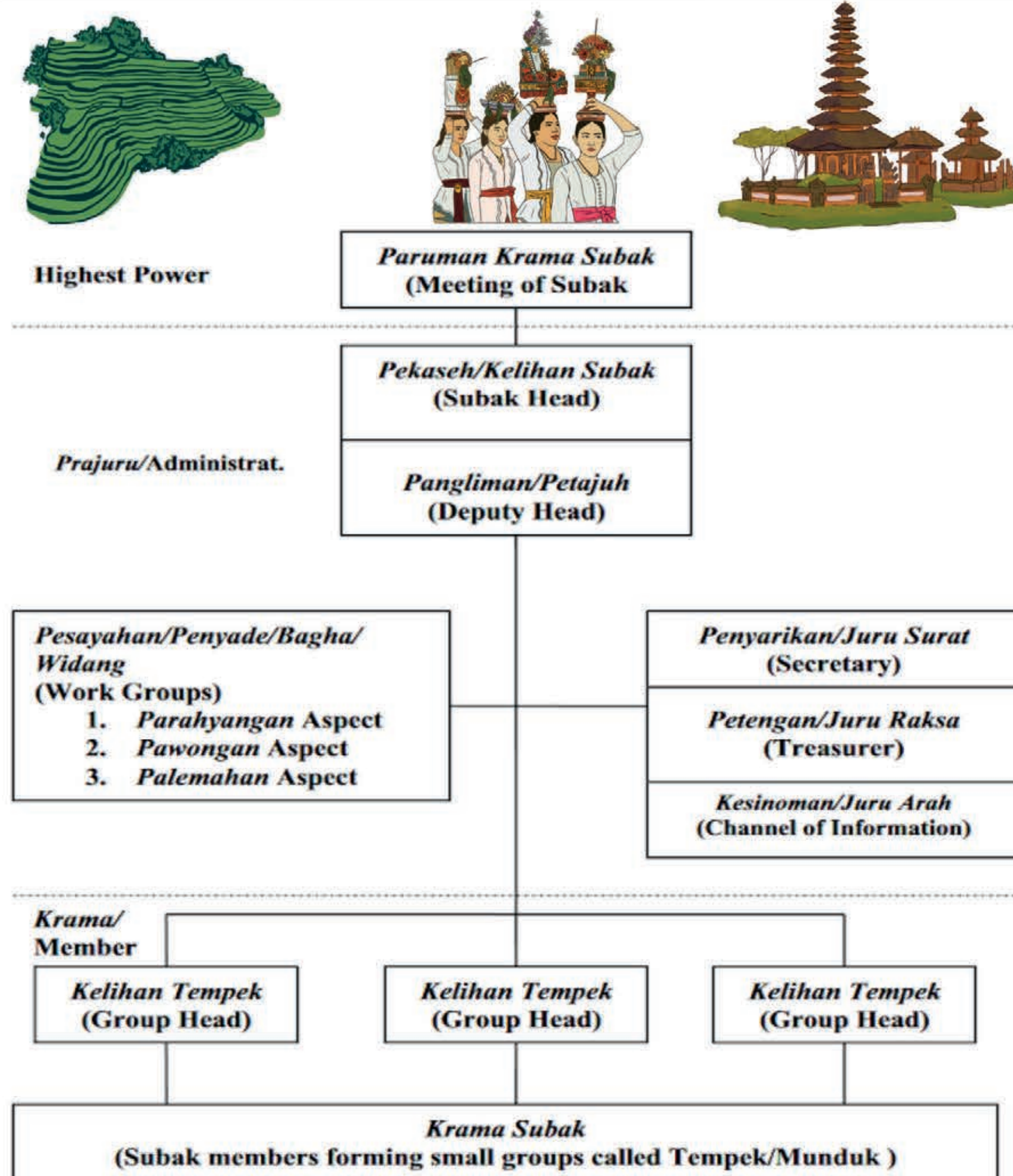
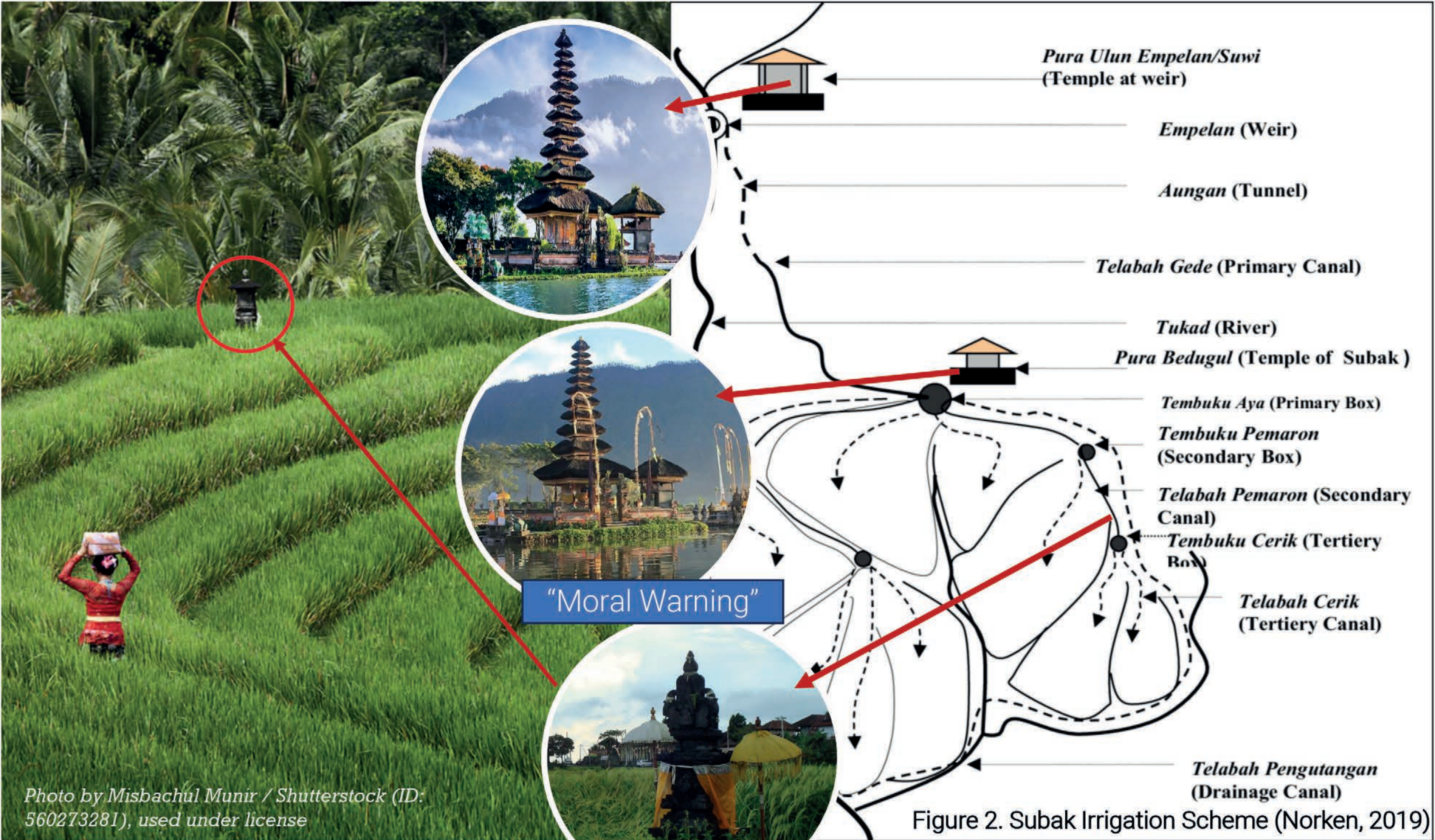


Figure 1. Organizational structure (Norken, 2019)

Governance Structure

- Religious leaders (Parahaya) → Festivals & Rituals
- Krama Subak (Pelemahan) → agricultural and planning → tax
- Bandjar (Pawongan) → legal institution for other civil, public and social matters



Discussion

Table.1 Functions and Sustainability (own table)

Functions	Cultural & Religious influence	Nature-Based Solution (NBS)	SDGs
Community-based food production & Agroecology	Balinese lunar calendar and temple rituals; farming is seen as part of spiritual duty	Organic methods, synchronized cropping, low-input farming	2 ZERO HUNGER 12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Equitable water sharing through ritual governance	Water distribution is guided by temple priests and rituals at water temples → Sacred duty	Decentralized irrigation management, fair distribution	6 CLEAN WATER AND SANITATION 11 SUSTAINABLE CITIES AND COMMUNITIES
Cultural heritage & cooperative governance	Customary law (awig-awig) → consensus and rituals	Ritual-based governance, temple networks, long-term compliance	11 SUSTAINABLE CITIES AND COMMUNITIES 16 PEACE, JUSTICE AND STRONG INSTITUTIONS
Landscape-based farming with ecological regulation	Subak landscape is sacred → ritual stewardship	Terraces reduce erosion and runoff; cropping cycle reduces pests	13 CLIMATE ACTION 15 LIFE ON LAND
Eco-tourism integrated with land stewardship	Rituals and temple life → community-led ceremonies	Tourism revenue supports conservation and cultural practices	8 DECENT WORK AND ECONOMIC GROWTH 11 SUSTAINABLE CITIES AND COMMUNITIES 12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Photo: Chakraphong, Adobe Stock, 2024.

Conclusion

- Functions as a cooperative system → shared rules, democratic assemblies, and collective responsibilities.
- Governance sustained by cultural norms, religious rituals, and customary law (awig-awig).
- Values ensure long-term compliance, trust, and cooperation without legal enforcement.
- Contributes to multiple SDGs by promoting equitable water use, ecological farming, cultural heritage, and eco-tourism.
- It represents a living model of sustainability through indigenous knowledge and potential to be a Nature-Based Solution.

References

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