

Amreta Max Win

Ciletuh Geopark: Nurturing Nature, Quenching Thirst – Innovating Solutions to Irrigation Challenges!



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Geopark Ciletuh

as UNESCO Global Geopark, The Ciletuh Geopark area offers stunning views, including mountains, waterfalls, rice fields, and rivers leading to the sea. Geopark Ciletuh is located in the southwest of Sukabumi Regency, West Java, Indonesia. It covers an area of 126,000 ha or 1260 km² which covers 8 sub-districts and 74 villages.

The Nature

The Ciletuh Geopark boasts a breathtaking tapestry of natural wonders, sculpted by the forces of geology and time. Lush rainforests cloak rolling hills, while dramatic cliffs plunge into turquoise waters. Majestic waterfalls cascade down moss-covered rocks, and hidden caves whisper tales of ancient secrets. The earth itself reveals its history, with towering rock formations showcasing layers of sediment dating back millions of years.





The Culture

Deep within the breathtaking Geopark Ciletuh, nestled among lush valleys and cascading waterfalls, lies a vibrant tradition called "seren taun." This annual harvest festival, celebrated by the local Sundanese communities, is a harmonious blend of thanksgiving, cultural expression, and community spirit.



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The People

The fertile plains of Geopark Ciletuh pulsate with life, particularly through the tireless hands of paddy farmers. These individuals form the backbone of the local agricultural scene, meticulously tending to sprawling rice fields that blanket the landscape. While other occupations like fishermen and tourism providers contribute to the geopark's vibrancy, it's the rhythm of rice cultivation, passed down through generations, that truly defines the soul of this captivating region.



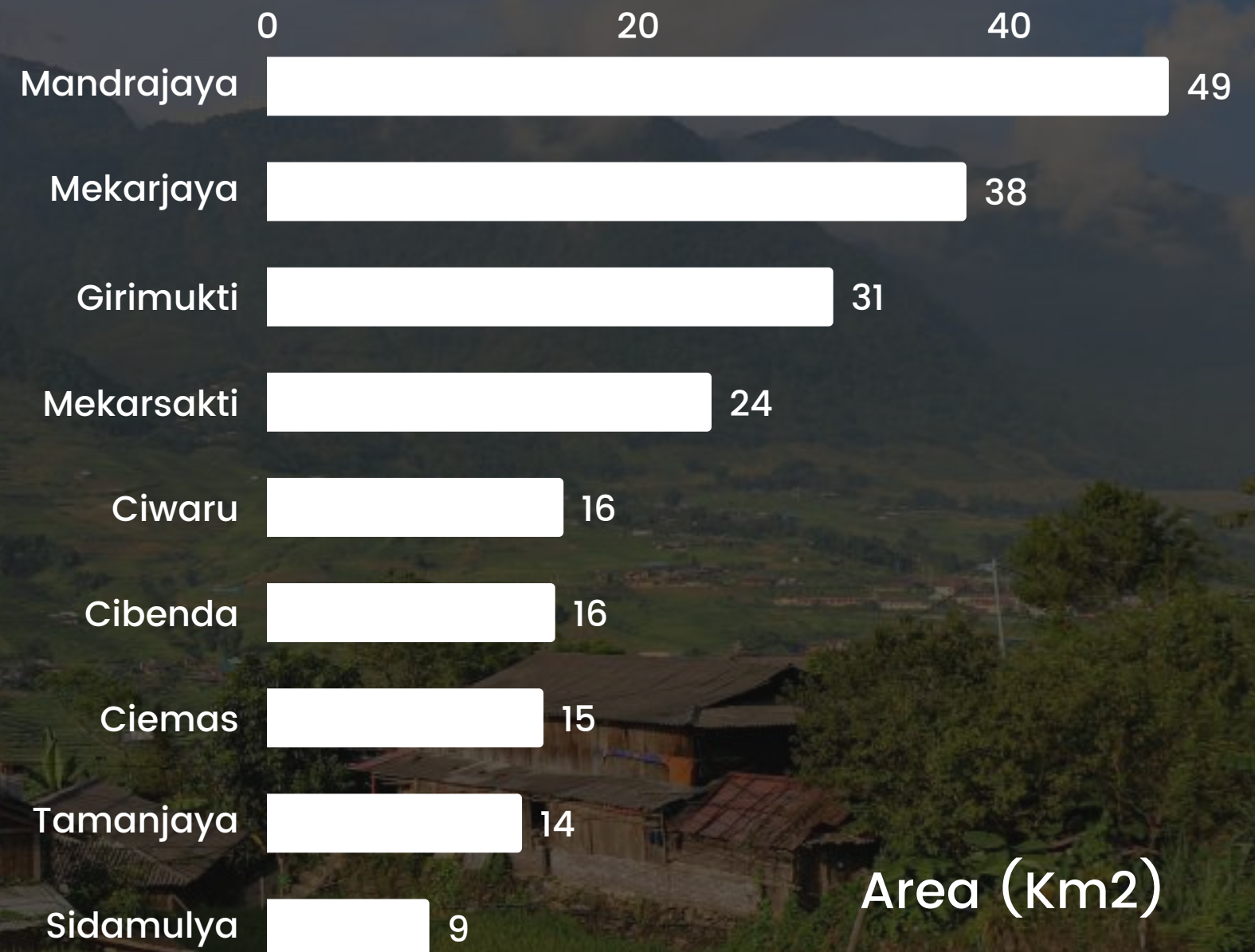
Mandrajaya Village

Nestled amidst the lush hills of Sukabumi Regency's Ciemas district, Mandrajaya thrives as one of the nine villages designated for the region's agricultural sector. Its fertile lands, nurtured by the cool mountain climate, have long sustained generations of farmers who cultivate a diverse range of crops. From the staple paddy fields yielding fragrant rice to the verdant vegetable patches bursting with seasonal bounty, Mandrajaya's agricultural landscape paints a vibrant picture.



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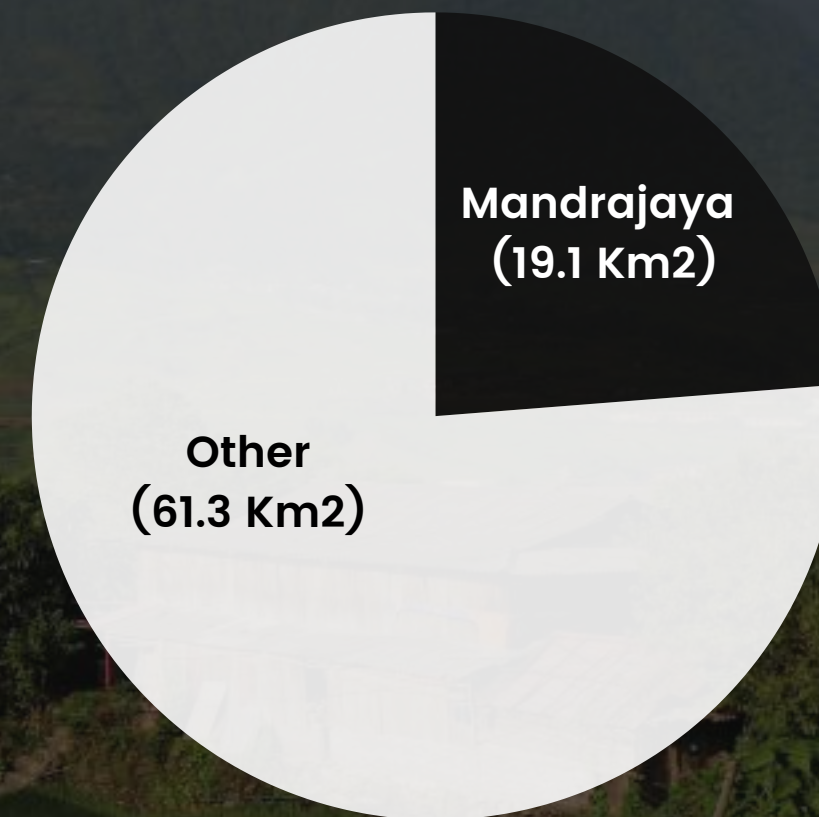
Mandrajaya Village



Area (Km²)

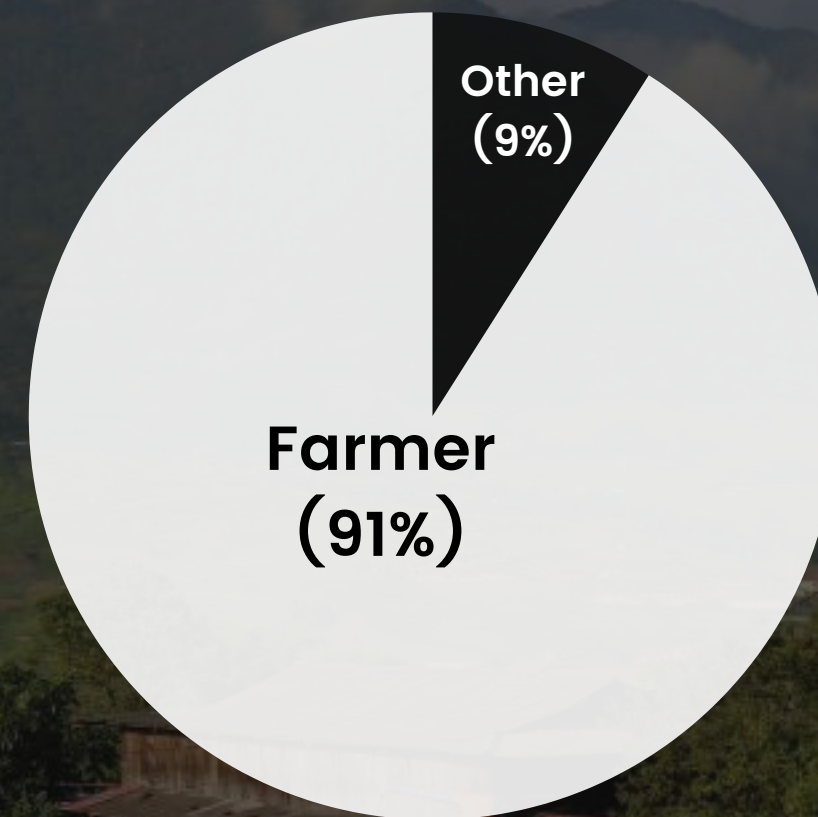
The Paddy Fields

Mandrajaya, stands out as a significant contributor to Ciemas District's agricultural sector, holding an impressive 23.7% of the total paddy field area. This village, plays a crucial role in the district's agricultural output. Its vast lands provide fertile ground for various crops and agricultural practices, potentially shaping Ciemas's agricultural identity and contributing to the region's food security.



*the average paddy field area in the same district are only 8.94 Km2.

Occupation





Facing The Issues

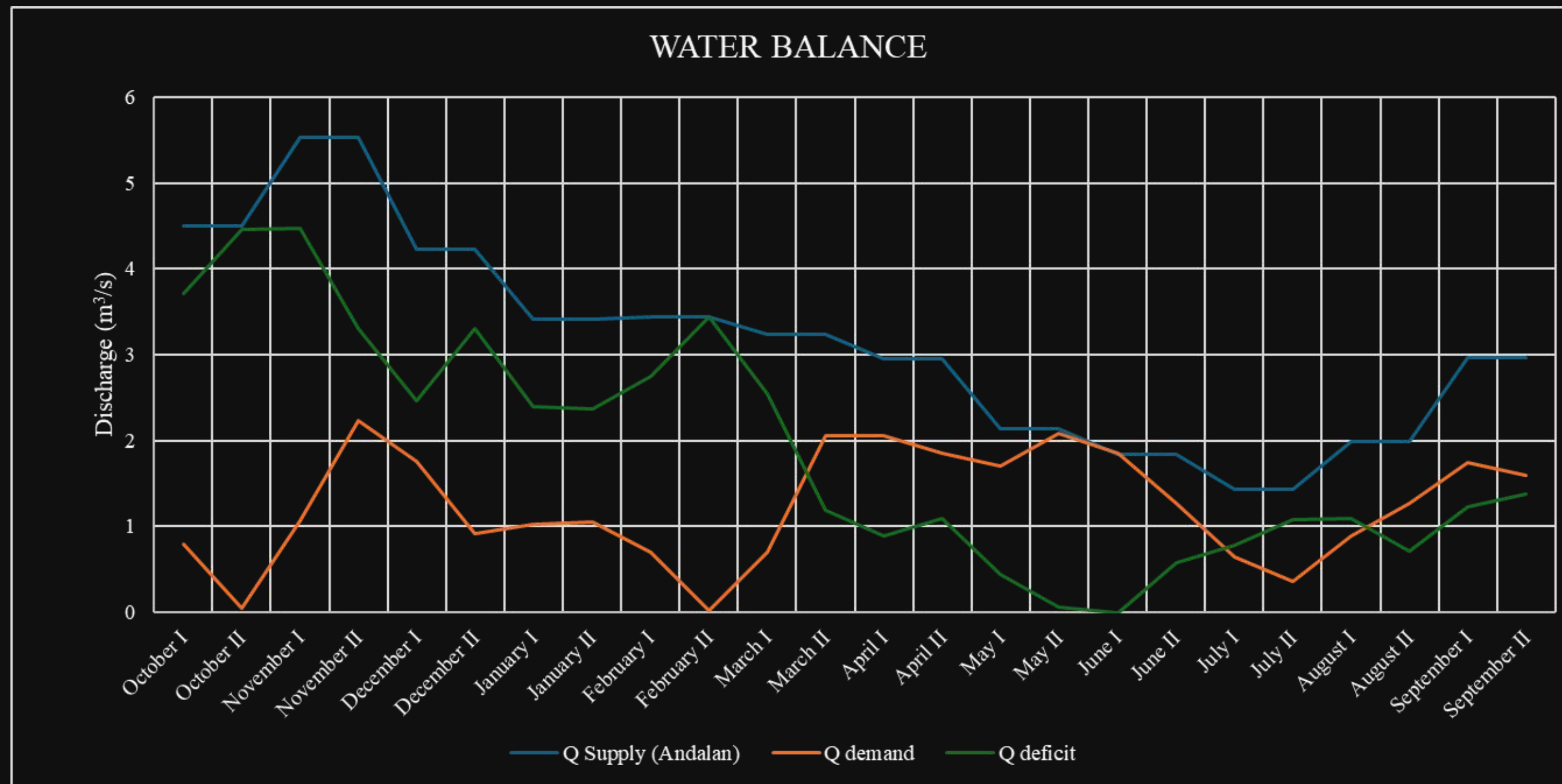
Flash floods: 2018, 2020

Floods: 2018, 2020, 2023, 2024

Drought: 2018, 2019



Water Mis-management?

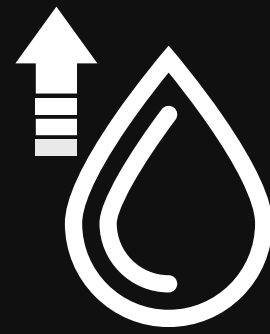


“we want to contribute to enhance the wellbeing of the local farmer in mandarajaya village.”



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Our Goals:



Store 3,000 m³ of flood volumes

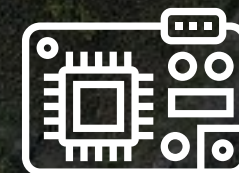


Ensure water balance for 221 Ha of paddy fields



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Amreta Safety Irrigation System (ASIS)



Micro Controller



Flow Sensor



Solar Panel



Wifi Module



Detention Pond

The Pilot Project

Big Idea



Store 3,000 m³ of flood volumes



Ensure water balance for 221 Ha of paddy fields

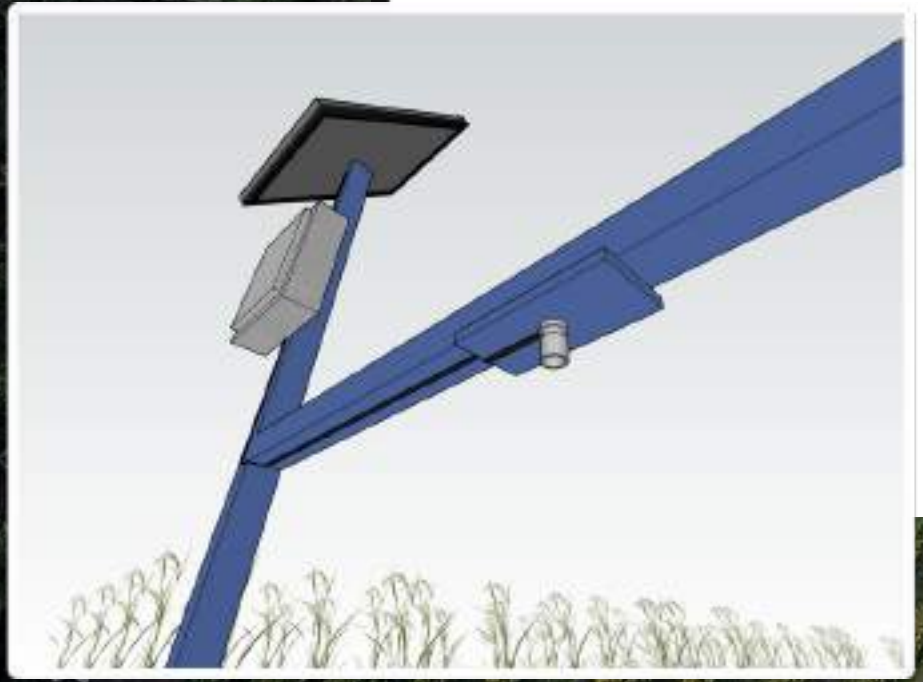
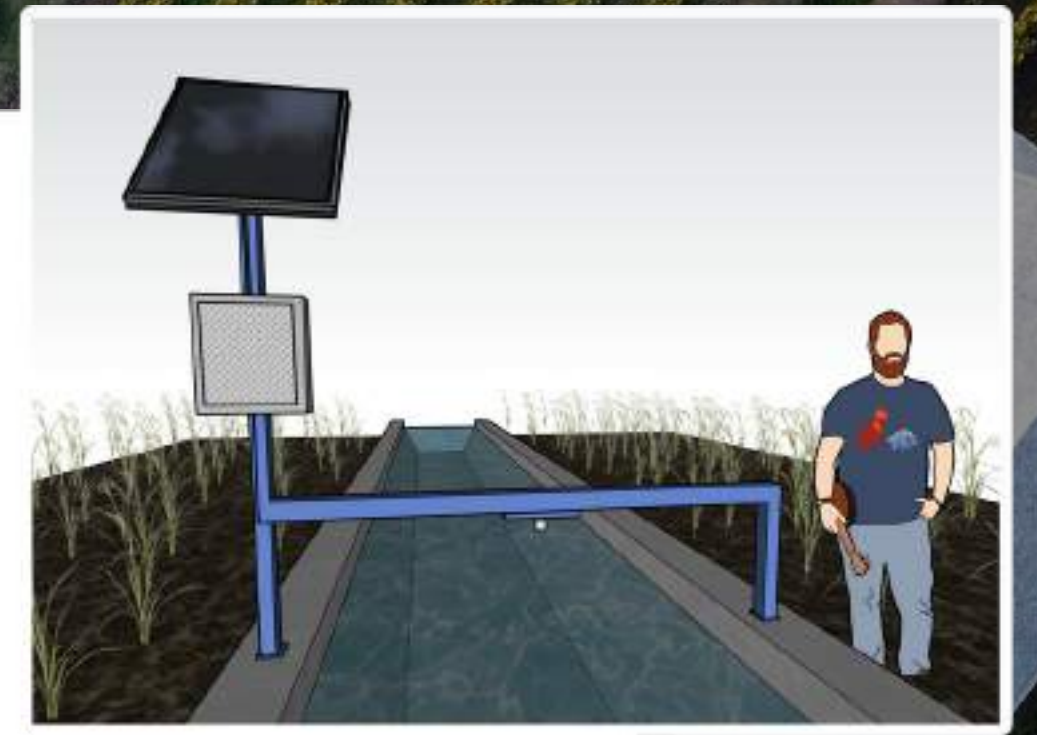
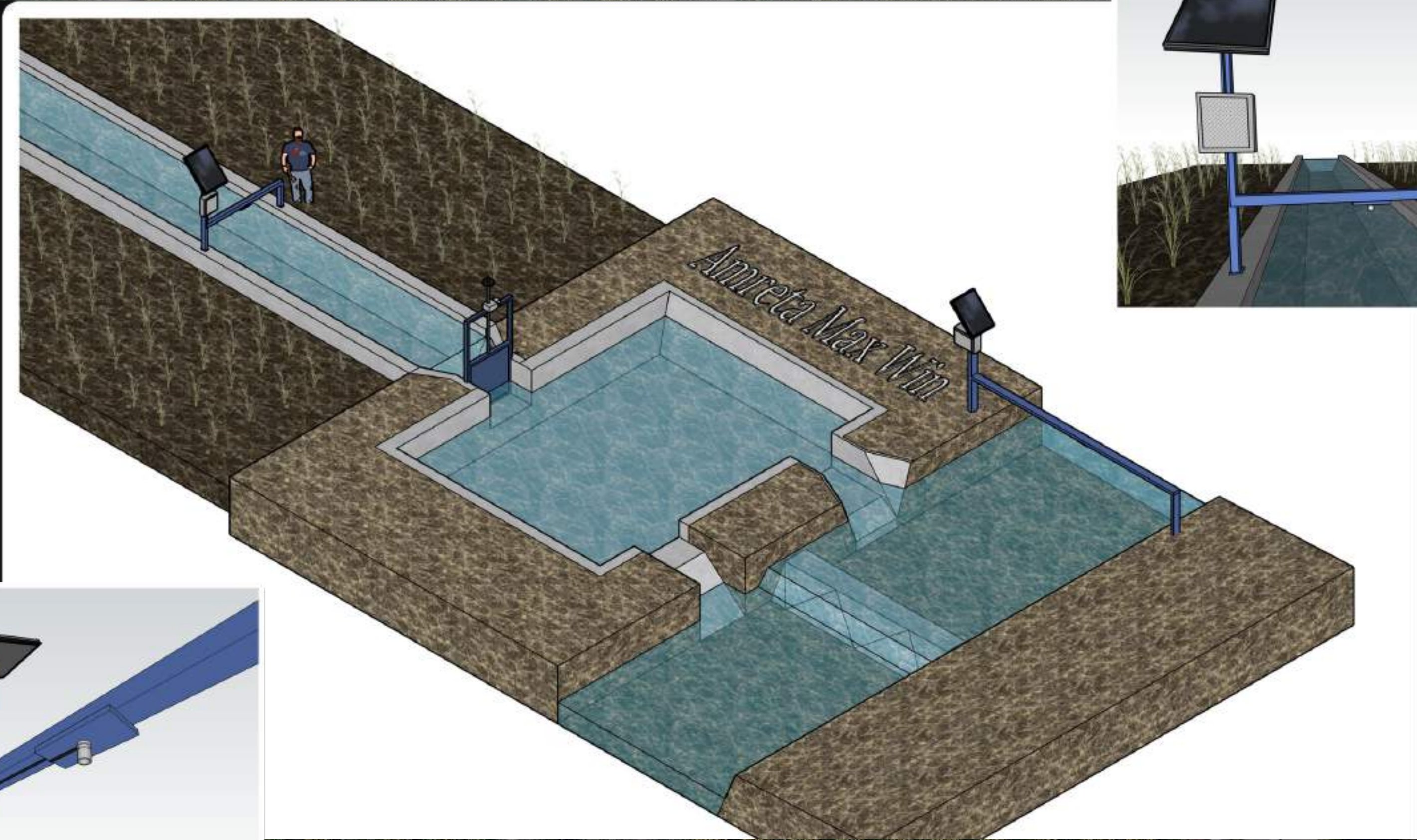
The Pilot



Store 8 m³ of flood volumes



Ensure water balance for 0,6 Ha of paddy fields



Stakeholder Mapping



RUKUN WARGA IN
MANDRAJAYA
VILLAGE



FARMER GROUP IN
CIEMAS DISTRICT
(P3A)



HEAD OF
CIEMAS
DISTRICT

RELIGIOUS
LEADER

MILLENNIAL
FARMER
GROUP



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Timeline

WEEK 1

Introduction:
Group Discussion, Land
Mapping, and Water
Needs Analysis

WEEK 2

System Design

WEEK 3

Procurement of Tools
and Materials

WEEK 6

Farmer Training

WEEK 5

Trial and
Optimization

WEEK 4

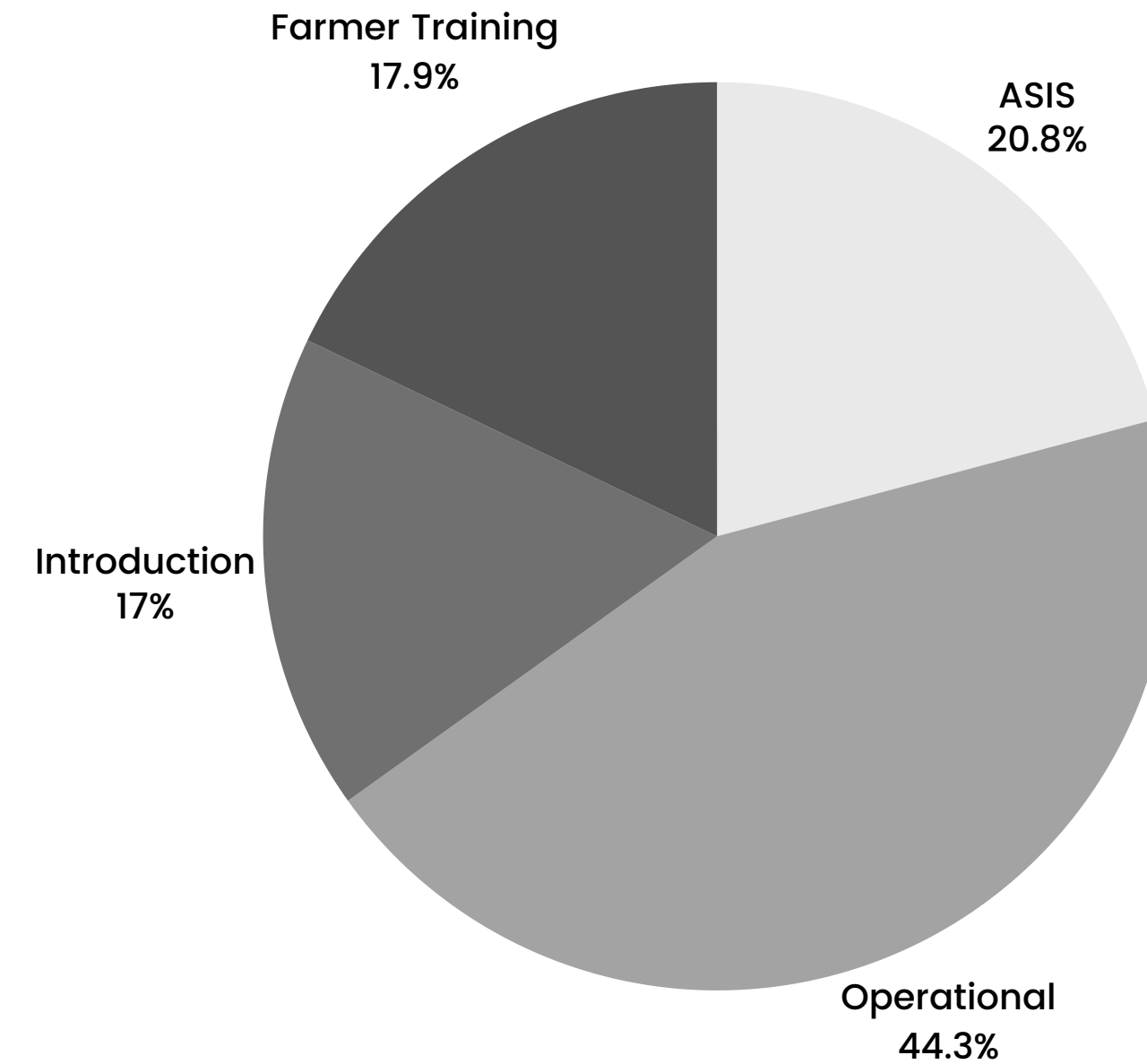
Installation and
Configuration



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Budget

| Program | Budget |
|-----------------|------------|
| ASIS | USD 207,87 |
| Operational | USD 441,32 |
| Introduction | USD 169,49 |
| Farmer Training | USD 178,45 |



*"Thousands have lived
without love, not one
without water."*

- W.H. Auden