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A Case Study of PPP Irrigation Project in China by Dayu Irrigation Group

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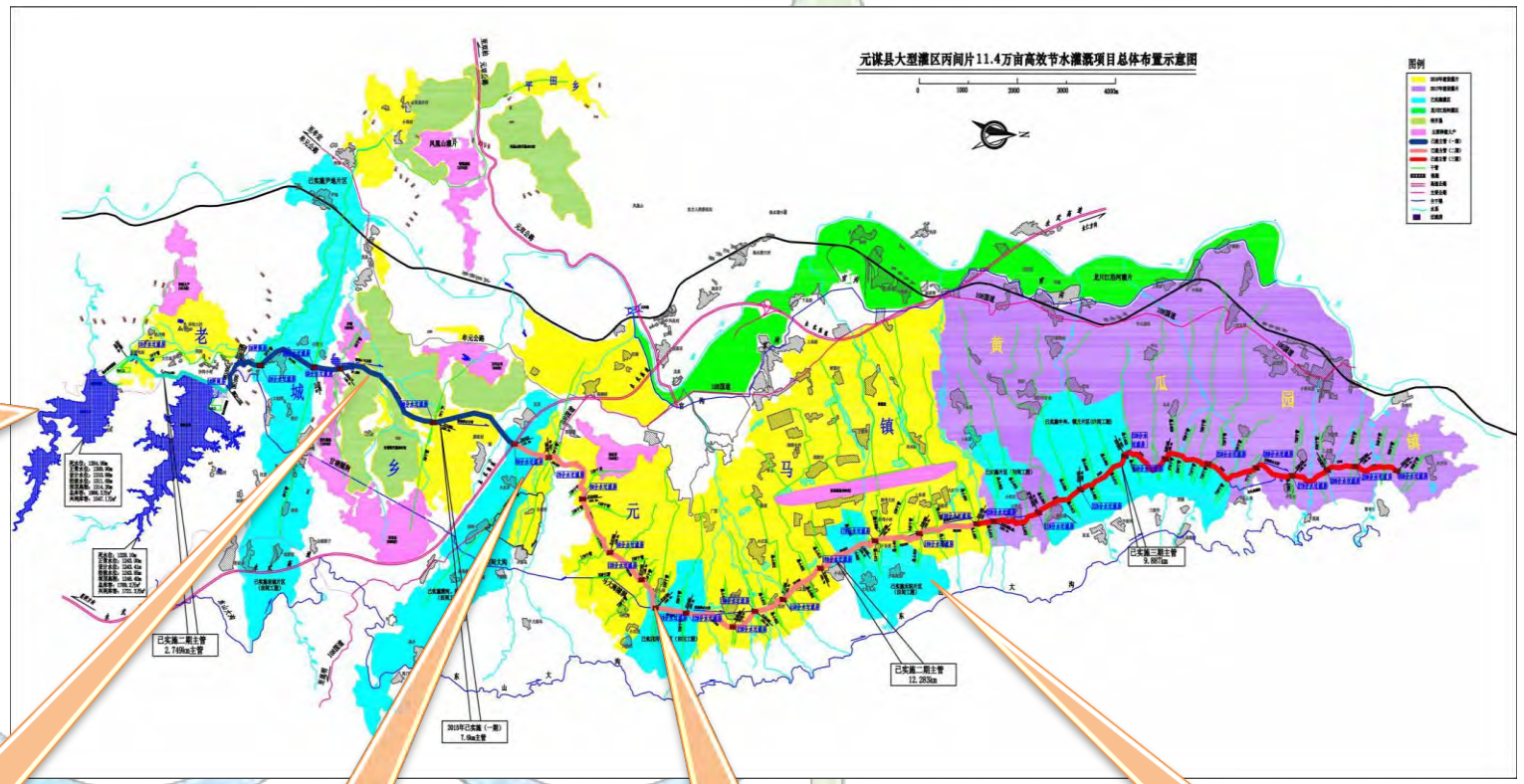
Project:	Yuan Mou Efficiency Water-Saving Irrigation Project		
Country:	P.R of China	**Sector:**	Irrigation and agriculture
Dates of the project:	2016.7	**Stage of the project**	Operate and Maintain

Description of the project:

The project is located in Yuanmou county of Yuan Nan Province. The total irrigated area of the project is 7,600 ha with smart water measurement system, automation and drip irrigation systems.

Items	Number
Reservoirs	2
Water intakes	2
Main pipeline	189 km
Sub-main pipeline	266 km
Lateral pipelines	345 km
Distributed pipelines	242 km
Smart water measurement devices	5000 sets

The Networks of Yuan Mou Efficient Water Saving Project



Reservoirs

Drop irrigation system

Main pipelines

Sub-Main pipelines

Diversion station

Diversion station

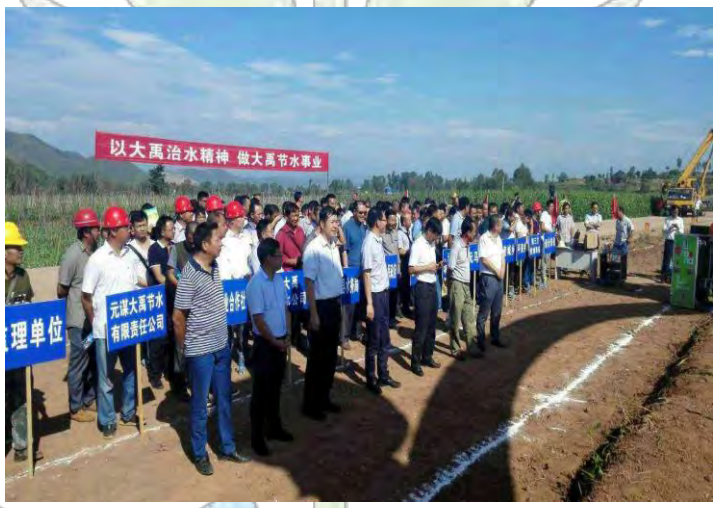
Construction of Pipelines and Drip Irrigation System

The farmers in the project area mainly depend on agriculture for their livelihoods. With the favorable temperature the local farmland is called as natural greenhouse suitable to grow crops in whole year, but water is the main constraint for farmers grow crops year round since the annual average precipitation is only 642mm and the annual average evaporation is 3032 mm. This PPP project successfully solved the problems for developing irrigation project, in fund raising, optimal system design and construction, sustainable operation and maintenance by introducing new mechanisms.

Main mechanisms introduced in Yuanmou PPP project

1. Jointly invested by Government, Dayu irrigation Group, Social capital and Local farmers;
2. Integrated and comprehensive design, construction, operation and maintenance;
3. Managed by specialized team with involvement of all stakeholders, including public, social capital, private and local farmers;
4. Enhanced the participation of water users by involving in management, water users not only get benefit from irrigation but also get benefit from project operation;
5. Encouraging water saving by introducing step water prices;
6. Introducing water right and water trade mechanism;
7. Extending service to farmers beyond water, such as fertigation and market information.

Participation of stakeholders



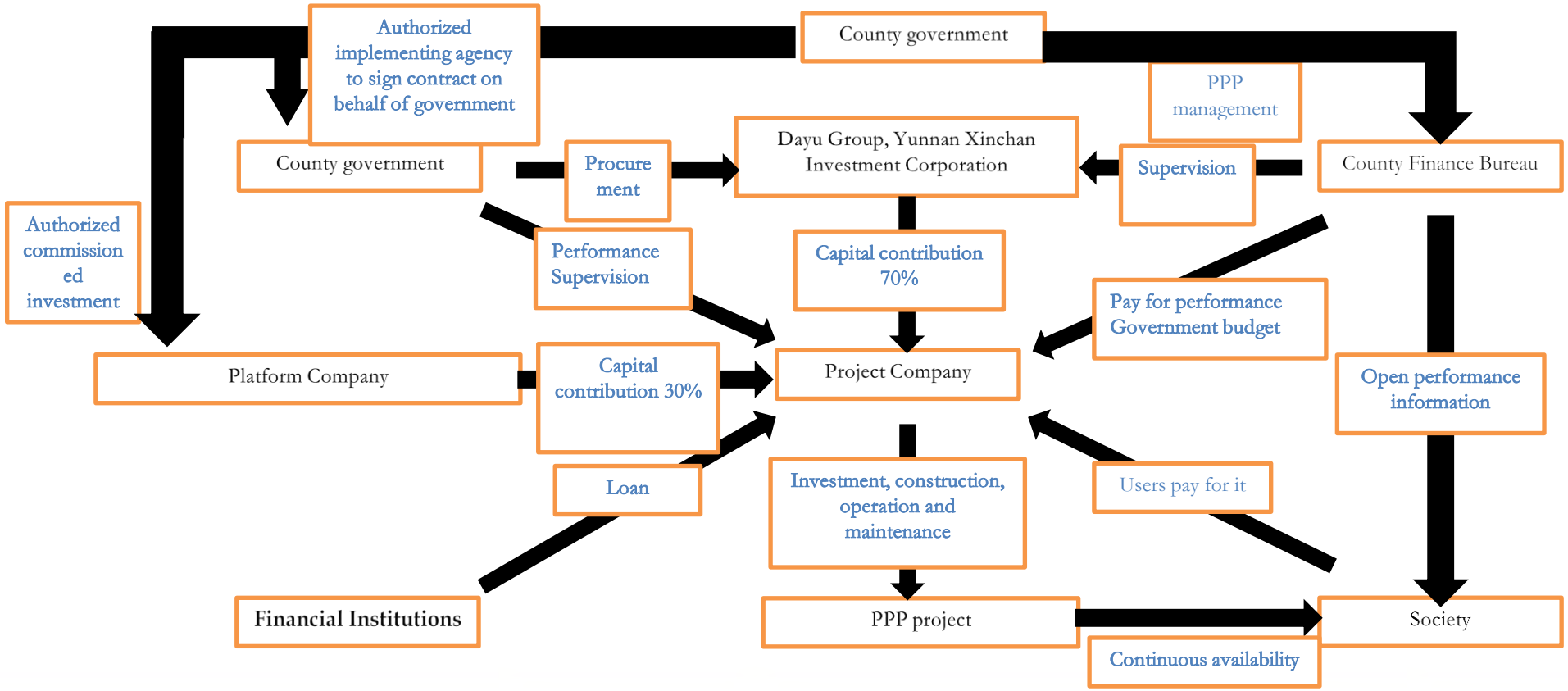
Beneficiary local community of Yuanmou PPP Water-saving Project

Beneficiary	Number
Township	4
Village	110
Household	13,300
People	66,300

Before construction of the project

After construction of the project

Project organization and management structure



Yuanmou PPP Water-saving Project help farmers to grow high-value crops






Outcome 1: Increase access to essential services and lessen social inequality and injustice

Due to small land holdings and low economic return of conventional farming practice farmers are vulnerable people in competition for water, and the water supply service to farmers is very low. Usually farmers could not get water on demand and couldn't grow high-value cash crops and get good yields.

This PPP project solves the above problems by integrated design, construction and management of the water-saving irrigation project. Farmers can receive water on demand for growing high-value cash crops. Equipped with smart water management system farmers in the project can get equal service. With the complete and advanced drip irrigation system the labor intensity for irrigation has been reduced significantly which is of importance for women and vulnerable farmers.

Outcome 2: Enhance resilience and responsibility towards environmental sustainability

By using regulated reservoirs as water source, the project can guarantee the irrigation water demand in extreme dry season under climate change. By applying drip irrigation and fertigation technology water saving is achieved and runoff from farmland is also reduced, which not only increasing water use efficiency, but also reducing the losses of fertilizers and contributing to environment protection.

Outcome 3: Improve economic effectiveness and sustainability

The project generates the following benefits:

1. With the operation of the project, in the project area cropping intensity has increased from 1 crop to 3 or 4 crops a year, and crop verity changed from conventional field crops to cash crops, as the result the gross revenue from farmland is increased from 2,1000 USD to 85,000 - 113,000 USD per ha.

2. Due to the increase in agricultural production, the processing industry and transportation have developed dramatically, which increasing sustainable employment and local income.

3. Due to scaling up of farm size and application of automation in the management of irrigation system, labor intensity for irrigation is reduced and more labor can shift from field to other sectors;

4. More employment opportunity is generated for women labors in harvest of fruits and vegetables, processing industry and marketing products.

Outcome 4: Promote replicability for the development of PPP projects

Yuanmou water-saving project is the first PPP project in agricultural irrigation sector in China. With the successful operation of the project, it attracts many visitors from government departments, companies, institutions, related professionals. The project is serving as the training base for new developing model and reform in irrigation sector. Dayu Irrigation Group is building more PPP water-saving projects in Yun Nan Province, and the model will be applied in other provinces with favorable conditions.

Outcome 5: Fully involve all stakeholders in the projects

All stakeholders, including government sectors, financial institutions, irrigation companies, farmers, business sectors, etc. have involved in the design, construction and management of the project. All stakeholders were directly involved in the PPP project and directly affected by it. All of them have received benefits from the PPP project.

- **Government achieving local social and economic development in sustainable way by increasing agricultural production, generating employment opportunity, saving water and reducing fertilizer application.**
- **Financial institutes can get the expected investment return;**
- **Irrigation company get economic return from the design, construction and operation of the project;**
- **Farmers get benefit for increasing income, reduced labor intensity and better service;**
- **Business sectors get more business opportunities in product processing industry and marketing.**

Conclusion

Yuanmou Water-saving Project is a Successful Replicable PPP Project in Irrigated Agriculture


thank you!

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- Minimize text and comply with good presentation practices
- Use Arial size 41 for Heading; Arial Font size 28 for text; and use Red color for any points to highlight (preferably)
- For sub-points use Arial font size 28 for 1st level, font size 24 for 2nd level, font size 20 for 3rd level, font size 18 for 4th level, and font size 16 for 5th level (preferably)
- Slides can include photographs/ diagrams