Photovoltaic support in saline-alkali land

How to improve saline alkali soil in agricultural ecosystem?
Use drainage measuresto improve the saline-alkali soil in agricultural ecosystem. The cheapest way for reclamation of saline alkali soil is leaching of salts by irrigation water. Salt discharge were positively correlated with the decrease of groundwater level and soil EC.

Can subsurface pipe drainage improve saline-alkali soils?
We aimed to improve saline-alkali soils by assessing the effects of combining subsurface pipe (P a) and vertical well (S a) drainage measures on agricultural soils ecosystem. In a five-year field experiment, soil was sampled 0.5 m, 5 m, 7.5 m horizontally away from the P a, and 0.5 m, 30 m, 60 m horizontally away from the S a.

Do solar panels improve soil & vegetation parameters?
The results showed that the PV arrays and fencing significantly improved soil and vegetation parameters,with the PV arrays dramatically increasing carbon and nitrogen storage in plants (including aboveground,underground,and litter) and soil.

Do PV panels reduce plant productivity in grasslands?
A previous study in the UK found that PV arrays in grasslands reduced plant productivity by 25%in sheltered zones under the PV panels (referred to as 'Under zones') compared to the ambient grassland; however,soil properties did not vary between the treatments (Armstrong et al.,2016).

What is the cheapest way for reclamation of saline alkali soil?
The cheapest way for reclamation of saline alkali soil is leaching of salts by irrigation water. Salt discharge were positively correlated with the decrease of groundwater level and soil EC. The farther away from drainage measures,the greater the similarity bacteria community.

Where are distributed solar PV systems installed?
Distributed solar PVs are installed on marginal agricultural lands(Martins et al.,2007),building rooftops (Bódis et al.,2019),water surfaces (Liu et al.,2019),and other unused lands to minimize potential ecological and environmental impacts.

This is the mechanism of biological improvement of saline-alkali land. A study on the utilization of different saline-alkali land in the Yellow River Delta found that the salt ...

Amid global climate change and population growth, the prevalence of saline-alkali lands significantly hampers sustainable agricultural development. This study employs theories of asymmetric information and ...

Introduction. Soil salinize-alkalization is a worldwide problem. At present, there are ~8.31 × 10 8 ha of

land suffering from varying degrees of salinization and alkalinization in ...

Objective Fertility and enzymatic activity of the saline-alkali soil in relation to land use were analyzed for ecological improvements and restoration. Method At sites on Songnen Plain in ...

Soil salinization is one of the current global environmental problems. Current research on crops in saline-alkali land focuses on salt tolerance, but less on its ecological ...

There are ~1.0 × 10 9 ha of saline-alkali land (7% of all land) around the world [1].Saline-alkali land is an important cultivated land reserve resource for meeting the ...

Soil salinization is a significant threat to soil health, especially to the agricultural ecosystem; it reduces vegetation biomass, destroys ecosystem diversity, and limits land use ...

The area of saline-alkali land area is 3.02 ... At this point, it was necessary to use anchor rods and steel mesh to support the S a to increase the wellhead level. Finally, the ...

Saline-alkali land, a precious candidate arable land resources, plays a critical role in achieving agricultural sustainability. Drip irrigation (DI) is an effective method for ...

"A total of 337,900 mu of saline-alkali land has been transformed so far, and 3.47 million mu can be further transformed," the city"s mayor Yang Dayong said. According to Yang, ...

Agricultural enterprises carry out large-scale planting of cash crops under PV panels. In areas of desertification, saline-alkali land and coal-mining subsidence, models such ...

Iris typhifolia Kitag is a perennial herbaceous species with high ornamental and applied value. Elucidating the mechanism of saline-alkali tolerance in Iris is crucial for their ...

There is a large amount of uncultivated saline soil in China, and it is an important reserve of land resources. Finding ways to improve and manage these saline soils has become one of the ...

Saline-alkali land is widely distributed on the earth, and the area of saline-alkali land in the world is about 1.0 × 10 9 hm 2, accounting for about 25% of the earth"s land area ...

Moreover, restoration of saline alkali land will promote the development of animal husbandry, alleviating the poverty situation in Xinjiang. ... commercialization of purified ...

Therefore, to cope with the challenge of food security posed by salinization and explore the optimal DI strategy for crops in saline-alkali land, the objectives of this study were ...

western Songnen Plain is one of the three major areas of saline-alkali soil in the world; at present, the area of saline -alkali soil is more than 3 × 106 hectares [6]. Due to ...

Our results showed that paddy field expansion became the dominant land use change in western Jilin from 2015 to 2019, 25% of which was converted from saline-alkali land; this percentage is ...

The average IoU of DeepLab v3 + reached 0.900, 0.884, 0.920, 0.903, 0.911, and 0.926 for PVs on shrub land, grassland, cropland, saline-alkali land, water surface, and rooftop, respectively, which revealed ...

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