General-Overview: Considerations for Construction and Cultivation on North South Slopes

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Carbon footprint and environmental concerns

At first glance it seems that the N-S slopes cause substantial carbon footprint liability since the carbon that is now sequestered in the soil is released to the atmosphere due to the necessary earthmoving.

The construction of the N-S slope and terrain alternation is done only once and not for every growing season. One earthmoving operation will be sufficient for 15-20 years and more. During these years the crops absorb substantial carbon necessary for growth.

Figure 1: Slopes for grazing

- Surface soil that is cleared of carbon will increase the carbon concentration gradient between the atmosphere and the soil leading to faster rate of

mass transfer to the soil that again will sequester carbon to offset the released carbon due to earthmoving.

- Furthermore, cultivation on the slopes on a new semiarid arable land will substitute for cultivation somewhere else where the crops are grown now which is also a carbon liability. In other word, cultivation of soybean on the new N-S slopes in Morocco that creates carbon footprint for example will substitute for carbon release due to cultivation of soybean in China or the US.

All of these factors and a careful carbon accounting is expected to show that the carbon liability due to the slopes is most likely insignificant.

As for environmental concerns and criticism of the N-S slopes, we should leave this for policy makes in developing countries to decide. For too long western environmental groups were patronizing and advising developing countries on what to do. All types of economic developments cause environmental challenges and the N-S slopes is one of them. The N-S slopes have the potential for substantial economic development and food security for vulnerable countries which are susceptible to global economic and market fluctuations.

<u>proprietary technology & patents</u>

At present time no one has patents for the construction and cultivation on artificial slopes so we have a “freedom to operate”. As we advance and funding is available, we will develop proprietary technologies and file for patents.

One area for development is new auxiliary attached to existing earthmoving equipment. For example, a newly designed plow used for grading might have non-linear shape to provide efficient and faster earthmoving and grading. While we provide the design manufacturing could be delegated to Caterpillar or John Deere but ReSlope will retain the IP.

New cultivating from agronomic point of view could be developed by in-house agronomists who work now in the designated country for a pilot. One condition for such employment will assure ownership of IP by ReSlope.

Another point is that the cost and amount of dug earth is proportional to the square of the dimension of the slopes. A 60 feet slope will cost 9 times of that of a 20 ft slope. From that point of view, we want small slopes. On the other hand, a

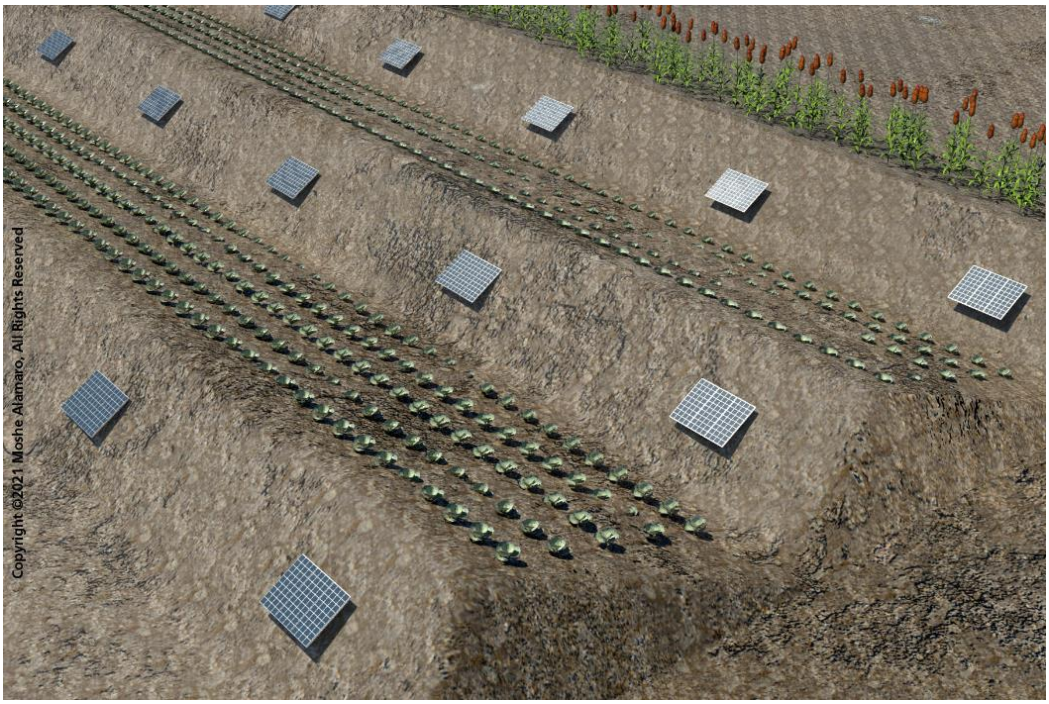

Figure 2: Solar collectors on the illuminated southern slopes will be used for electroculture

wider slope makes it easier for cultivation. Somewhere these is an optimal size for the slope size. Our company will develop propriety software to determine the optimal slopes size for different crops and soils as well as other considerations.

Applications for the southern slopes

Can we use the illuminated southern slope for solar power production? As early as the 19 century there were successful experiments that show that applying electric fields to the roots of plants stimulate growth. This is done now on small scale mainly for hobbies and on gardens and is called electroculture. The reason

that it is not applied on a large scale is that the transmission on large fields to large distances is cumbersome and expensive.

In the north-south-slopes however the southern slopes can collect solar energy that and it could be transmitted to the nearby northern slope, See artistic rendering above for such applications.

Pilot Development

A new enterprise should start from the least resistant path for success. It will be a mistake to develop a pilot in harsh-climate regions (Saudi Arabia) but it would be better to do this in a semi-arid dryland but also with substantial rainfall. Some areas in North Africa and specifically in Morocco might be the best place to start.

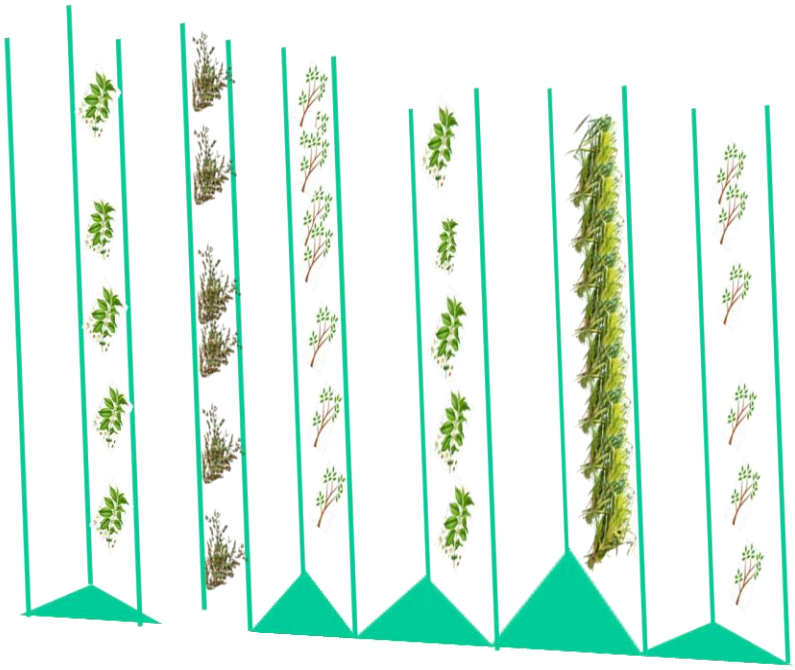

Figure 3: the pilot site where many different slope dimensions, sloping angels and different crops will be tested. Testing will also be also done on flat terrain nearby for control.

A testing lab for Phase I and its construction is described in the pre-proposal. In following Phase II, a pilot will require a few hundreds of acres preferably on a government land. The pilot will be used for the construction of slopes with different depth, width and sloping angles and preferably not far for a research

center with agronomic expertise. Different selected crops will be planted on different slopes and on flat terrain for control. Sensors will be planted in the soil to gauge temperate, moist and biotics. All the data could be transmitted on-time to us in the US to provide on-time expertise and advise.

The pilot will also be used as a showcase for potential investors for subsequent development and implementation.

Topics for R&D

Earth and Atmosphere: Atmospheric-land interaction, geomorphology and geochemistry, semi-arid watersheds, Rainfall patterns, rainfall and wind erosion, run-off water, climate solar irradiation, micro climate pre and post slope construction, select of regions for N-S slopes, soil, N-S ecological impact, impact on wild life, carbon and albedo footprint.

Engineering: Atmospheric-land interaction, soil stabilization, erosion prevention, carbon footprint, micro climate due to N-S slopes, ecological and environmental impacts, N-S slopes dimension and orientation, availability of earthmoving equipment, earthmoving landscape, size and angle of slopes, applications for both slopes, precision agriculture.

Agronomy, soil and plant Sciences: Semi-arid plant physiology, innovative agronomy, crops for N-S slopes, Is deep soil fertile? organic matters and biotics, hydrology, climate variability, carbon footprint, and drainage.