



Green Business Plan

for establishing a

Crop production farm protected with tree windbreaks

(TEMPLATE)

First and last name: _____

Date of birth: _____

Address: _____

Telephone: _____

Email: _____

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TOGETHER WITH

The **German Sparkassenstiftung (DSIK)** under a Memorandum of Understanding signed between GGGI and DSIK on the 27th of June on '*Green Entrepreneurial Education and Development of the Agribusiness Sector in the Republic of Uzbekistan*'.



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1. Summary

The proposed business idea is to produce _____ (crop/s) (e.g., wheat) protected with tree windbreaks for increasing the productivity of the farm and for improving environmental conditions including air quality and green areas for beneficial animals and insects, in other words, promoting ecosystem services such as carbon sequestration and pollination.

In Uzbekistan, impact assessments from the implementation of trees for windbreaks have shown an increase in crop yield and quality that has led to higher revenues due to the numerous benefits of wind protection. Different crops respond differently to wind protection with documented yield increases up to 20% under an optimal structure and after the trees in the windbreaks have reached their final height (e.g., yield increases for wheat are reported to be around 10%).

Considering my farm size of _____ (e.g., 7.2 hectares), I estimate a total _____ (crop/s) (e.g., wheat) production of _____ (e.g., wheat yield 3 ton/ha * 7.2 ha = 21.6 tons). Following the _____ (crop) (e.g., wheat) market's price (e.g., Uzbekistan's 2022 wheat price USD 205.38 per ton), the estimated annual revenue is about _____ (e.g., 21.6 tons * 205.38 USD/ton = USD 4,436.21). For protecting my _____ farm (e.g., 7.2 ha), I have decided (or an expert/consultant has suggested me) to plant _____ (e.g., 200 meters of linear windbreak perpendicular to the northern winds) with _____ (e.g., Karatal trees in row-spacings of 2m which will provide, once mature and with a height of 15m, approximately 60m of upwind and 300m of downwind protection against crop damaging considering Karakalpakstan wind velocities of 5m/s during March and April). The investment in trees to be planted is _____ (e.g., 200m of trees / 2m spacing = 100 trees * 0.18 USD/tree = 18 USD).

As a farmer situated in _____ (e.g., Kegeyli district) I have seen an increase in the occurrence of dust storms which have affected my farm as well as my neighbors' farms. I have been a farmer for _____ (e.g., the last 15 years) and I am looking for options to improve my farm's production as well as to have a positive impact in my farm's surroundings.

2. The Business Idea

2.1. The Green Business Model

The green business model consists in the production of _____ (crop/s) (e.g., wheat) protected with tree windbreaks for creating ecosystem services that will positively impact my farm's productivity and my farm's surroundings. For this, my responsibilities will be to source raw materials and produce agricultural products by leveraging labor and equipment, while taking care of and properly manage the trees planted as windbreaks.

As part of these responsibilities, an estimate of carbon sequestration from mature trees will be calculated by keeping track of the number of trees planted and those which have reached maturity due to proper care. The estimated carbon sequestration will serve for communicating to my customers and relevant government institutions on the farm's contribution for mitigating climate change and improving air quality. Additionally, windbreaks serve as a good way to reduce soil erosion when rows of trees or shrubs are planted along the edges of my farmland.

Planting trees for windbreaks will also bring advantages to my customers by improving the yield and quality of the products, securing the supply and overall supporting food security efforts in the region.

Furthermore, I will also register my full-time and seasonal employees as staff on my farm as part of my sustainable business activities, contributing to environmental, social, and governance criteria. The official registration procedure for staff gives my employees access to social security services and will have a positive impact on the social structures and security system in my neighborhood. It is very important for me that my activities reflect environmental as well as social responsibility.

3. Personal qualification

3.1. Professional qualification

(EXAMPLE) After graduating from high-school I attended agricultural vocational studies for 2 years. While exercising my profession as a farmer during the past 15 years, I have attended technical agriculture seminars for improving the management of my farm as well as for keeping records of my business practices for improving decision making. The last seminar I attended was provided by DSIK where I learned about how to conduct my business, develop a business plan and how to talk with banks.

3.2. Entrepreneurial qualification

(EXAMPLE) My continuous seek for doing things better responds to my desire to improve the productivity of my farm to support my family, as well as to create a favorable environment for me and my neighbors which can allow us to continue our production practices in the long-term.

While helping my parents with the production of wheat I got good insights of everyday farm business life from an early age. Following my technical learning and my work for the last 15 years, I have looked for solutions that can help me improve my farm's production while not having a negative impact in the environment and while improving the welfare of my employees.

As main manager of the farm, I have been responsible year after year for the production of wheat, the purchase of inputs like, for example, seeds and fertilizers, as well as for preparing the land and securing a proper production process. This experience has allowed me to understand the proper management of the farm and the need for seeking solutions that can further improve the productivity of it.

3.3. Motivation to implement a green business model.

(EXAMPLE) I have recently attended a training session in which I acquired knowledge of the additional benefits of planting trees around farms for wind protection and for improving the environment in my region. In addition, I was able to understand my farm's vulnerability to climate change and the need to take action now in order to improve the adaptive capacity of my farm to keep producing crops in the long-term. It also made me aware of the responsibility that I bear as a local employer for nature as well as for my staff and their families.

It is important to me to be able to secure a long-term production of my farm and achieve profitable returns. Therefore, I have been looking for actions that I can take on my farm in order to improve the yield of my inputs and secure the farm's long-term productivity. While seeking for solutions for my farm, I got to understand that some solutions will not only impact positively to my farm, but they will also have a positive impact in my neighbor's farm as well as in our community. Therefore, I am eager to implement actions that can help me and the people around me to have a better future.

4. Market

4.1. Market volume

(EXAMPLE) Uzbekistan is currently the largest consumer of wheat in Central Asia, with an estimated domestic consumption of around 8.5 million tons for 2023 according to the online source APK INFORM. Yet, domestic production in Uzbekistan is expected to cover only 78% of local consumption.

According to the article 'Improving the Economic Efficiency of Agricultural Production by its Diversification in the Republic of Karakalpakstan' available in Cyberleninka, in Karakalpakstan, around 85,767 ha of land have been allocated for wheat production. Actual yields in the region appear to vary widely, ranging between 0.5 to 3 tons per ha depending on access to water at critical growth stages, management, soil fertility classification, and other factors. Considering a high production yield, the total wheat production in Karakalpakstan can be estimated at 257,300 tons. On the other hand, Uzbekistan's wheat consumption per capita stands at 245 kg per year. Considering Karakalpakstan's population of approximately 2 million people, a rough estimate for the region's wheat consumption would indicate the need for approximately 489,900 tons in 2023.

Considering these numbers, local production will cover only 53% of the region's estimated consumption, which triggers the need for importing wheat to cover the annual needs.

4.2. Market development/trend

(EXAMPLE) Uzbekistan is a net importer of wheat. In fact, the 2011 to 2020 decade presented a wheat trade deficit increase for Uzbekistan from USD 64 million to USD 588 million. Globally, geopolitical and climate events have affected wheat production and prices, exposing Uzbekistan's vulnerability to drastic price fluctuations. For instance, the conflict in Ukraine led to an increase of bread prices in Uzbekistan by as much as 75%.

In terms of prices, Uzbekistan's wholesale wheat prices are expected to range between USD 190 and USD 210 per ton in 2023, lower than international prices. In terms of demand, the continuous growth in consumption and government efforts to bolster food security will put pressure to increase local production of wheat.

4.3. Risks in the market

(EXAMPLE) In order to improve productivity, my neighbors are resorting to short-term measures to increase production like an excessive use of synthetic fertilizers. Yet, I have opted to apply different measures following the Good Agriculture Practice Manual for Uzbekistan, as well as planting trees that will take longer to have a positive impact in my farm. Therefore, in the short-term, I may face a competitive disadvantage against my neighbors.

Another risk is the possible disinterest of my buyers and government institutions in the positive impact of my practices in the long-term, especially in terms of carbon sequestration. However, considering the Global and Uzbekistan's agenda for the development of the agriculture sector and for mitigating climate change, taking actions now as well as reporting on the benefits of these actions will take high relevance in the near future. Additionally, aligning my business activities with environmental, social, and governance criteria can attract free funding, technical assistance, and other benefits through international donor organizations.

SECTION 4 NOTE – Potential Source of Information:

For Uzbekistan

- Agriculture Statistics – <https://stat.uz/en/official-statistics/agriculture>
- Product prices and News - <https://agromart.uz/en> (APP - Agromart)

For Karakalpakstan

- Agriculture Statistics – <https://stat.uz/en/official-statistics/agriculture>
- Regional Statistics - <https://karakalpakstan.uz/en/page/show/1>
- Product prices, knowledge materials, and news - <https://greenaral.uz/en> (APP - Jasilawil)

5. Customers

5.1. Operating radius

(EXAMPLE) My farm is located in Kegeyli District, northwest of Kazanketken township, in the Republic of Karakalpakstan. The farm size is 7.2 ha, it has access to a primary canal for irrigation purposes, and it is exposed to winds of 5 m/s.

5.2. Target group

(EXAMPLE) In Karakalpakstan, wheat production can be contracted with either *Don Maxsulotlari*, the state joint stock company, or with *AgroClusters*, which work mostly with small farmers. The latter provides loans and inputs on consignment early in the season.

5.3. Customer needs and customer benefits

(EXAMPLE) The Government is the largest buyer of wheat in the region. Livestock farms also buy but in less quantity through village aggregators or from the bazar as fodder. In terms of market needs, in order to meet consumer requirements there is a high demand for quality and safely produced products. Unfortunately, the current local production is of low quality and in limited quantity. There are no clear safety and quality standards along the supply chain which results in lower prices for locally produced products.

6. Competitive Analysis

6.1. Preliminary remarks

(EXAMPLE) In the following section I have identified local competitors producing wheat within a radius of 10 km. In addition to the 3 farms described below, there are multiple wheat production farms in the region. Most of them follow the same type of activities with little differentiation among them.

6.2. Competitor 1

(EXAMPLE) Wheat farming entity with a farm size of 10 ha and access to primary canal with limited water for irrigation.

6.3. Competitor 2

(EXAMPLE) Wheat farming entity with a farm size of 5ha and access to secondary canal with limited water for irrigation.

6.4. Competitor 3

(EXAMPLE) Wheat farming entity with a farm size of 10 ha, access to primary canal for irrigation purposes.

7. Sales and Communication

(EXAMPLE) As mentioned before, there is little differentiation between wheat production farms in the region. Therefore, I find the implementation of trees for windbreaks and the reporting of carbon sequestration as a good differentiation strategy to showcase my commitment to improve my farm practices with a positive impact to my surroundings. Currently, there are online platforms in Karakalpakstan, like for example Jasilawil, where I can showcase my farm's experience in order to motivate other farmers to take action, as well as to capture the attention of programs that are supporting farmers to further improve the productivity of their farms. By showcasing my commitment to contribute to a positive change, it may provide me with the opportunity to access additional green technologies and financing to keep improving my farm practices.

8. Procedures and Organization

8.1. Core processes

(EXAMPLE) As the responsible and representative for my farm, I would like to set up a mutual agreed contract with AgroClusters. My differentiation with other farmers will be the annual reporting on trees' status and carbon sequestration as a mechanism to support the government efforts against climate change and environmental improvement.

I will be responsible to acquire the needed production inputs, as well as negotiating and registering contracts for additional labor required. I will also be in charge of managing the soil preparation, planting, caring, controlling for pest and diseases, and harvesting, following the Good Agriculture Practice Manual for Uzbekistan.

8.2. Supporting processes

(EXAMPLE) I am supported by my partner in accounting. My partner has very good knowledge in this area following the education received and previous work experience. For more complex questions or for the annual accounts and tax payment, I will consult with a tax consultant.

In addition, I will make use of the pool of consultants available on the platform Jasilawil for any additional technical or farm management questions that I need to clarify.

SUB-SECTION 8.2. NOTE – Potential Platform for Accessing Support:

For Uzbekistan

- Consultation Services - <https://agromart.uz/en> (APP - Agromart)

- Chamber of Commerce and Industry of Uzbekistan - <https://chamber.uz/en/index>

For Karakalpakstan

- Consultation Services - <https://greenaral.uz/en> (APP - Jasilawil)
- Chamber of Commerce and Industry of Uzbekistan - <https://chamber.uz/en/index>

8.3. Staff planning

(EXAMPLE) In addition to my own and my partners' labor force, my farm regularly employs 4 seasonal staff. The staff seasonally employed is and will continue to be formally registered keeping their employment record book open. This allows and will allow to keep contributing as employer to the Social Tax and secure their social benefits.

8.4. Infrastructure and Equipment

(EXAMPLE) No major infrastructure is needed for operating the farm. In terms of equipment and following the annual production plan, a truck will be leased from local service providers.

SECTION 8.4. NOTE – Potential Platform for Accessing Technology Support:

For Uzbekistan

- Consultation Services - <https://agromart.uz/en> (APP - Agromart)
- Innovation and Tech Support - <http://akis.agro.uz/uz>

For Karakalpakstan

- Consultation Services - <https://greenaral.uz/en> (APP - Jasilawil)

9. Explanation of target figures.

(EXAMPLE) The revenue planning is based on 200 field workdays, considering a farm size of 7.2 hectares, and an annual wheat production of 21.6 tons, all calculated for one year. The estimated annual revenue of USD 4,436.21 considers the wheat market price in Uzbekistan for 2022 (205.38 USD/ton). In addition to the annual revenue from grain, I have also estimated the revenue from wheat straw bales, which is a secondary commodity. Considering an estimated yield of 400 bales per hectare and a price of USD 0.89 per bale, an additional annual revenue of USD 2,563 (400 bales/ha * 7.2 ha * 0.89 USD/bale) has been considered. On the other hand, the operational expenses consider those related to planting, cultivation costs, labor costs, harvest costs, and profit and other taxes. Based on previous annual performance, the total operational expenses are estimated at approximately 90% of the total income.

In terms of additional investment for the farm, an expert/consultant has suggested me to plant 200 meters of linear windbreak perpendicular to the northern winds with Karatal trees in row-spacings of 2m which will provide, once mature and with a height of 15m, approximately 60m of upwind and 300m of downwind protection against crop damaging considering Karakalpakstan wind velocities of 5m/s during March and April. The investment in trees to be planted is (200m of trees / 2m spacing = 100 trees * 0.18 USD/tree) 18 USD. The expert has suggested me to plant Karatal considering its potential future source of income by selling Karatal cuttings or lumber if proper tree management practices are applied. As potential source of income, a conservative price of USD 0.15 per Karatal cutting has been considered after reaching the maturity of the trees (after 4 years), according to the opinion of the expert/consultant (10 lumber per tree per year).

10. Revenue and Profitability forecast

(EXAMPLE)

Years	1	2	3	4	5	6
A) Income (1+2)	7,073	7,073	7,073	7,073	7,223	7,223
1) Crop (e.g., wheat) Income (a + b)	7,073	7,073	7,073	7,073	7,073	7,073
a) Primary Product (wheat grain)	4,510	4,510	4,510	4,510	4,510	4,510
Yield (farm yield, tons)	22	22	22	22	22	22
Price per unit (USD/ton)	205	205	205	205	205	205
b) Secondary Product (straw bales)	2,563	2,563	2,563	2,563	2,563	2,563
Yield (farm yield)	2,880	2,880	2,880	2,880	2,880	2,880
Price per unit (USD/unit)	0.89	0.89	0.89	0.89	0.89	0.89
2) Tree Income (c x d)					150	150
c) Product (cutting, lumber, fruit)					1000	1000
d) Price per unit (USD/ton)					0.15	0.15
B) Operational Expenses (3+4+5+6+7)	4,991	4,991	4,991	4,991	5,009	5,009
3) Crop Operational Expenses (e+f+g)	3,507	3,507	3,507	3,507	3,507	3,507
e) Planting						
Ploughing	60	60	60	60	60	60
Seedbed preparation	52	52	52	52	52	52
Sowing	25	25	25	25	25	25
Fertilization	48	48	48	48	48	48
Grain transportation to farm	15	15	15	15	15	15
f) Inputs						
Seed	664	664	664	664	664	664
Fertilizers	782	782	782	782	782	782
Pesticides	255	255	255	255	255	255
Water (irrigation)	245	245	245	245	245	245
Equipment maintenance	0	0	0	0	0	0
Diesel	144	144	144	144	144	144
g) Harvest						
Combine harvester	440	440	440	440	440	440
Other (e.g., hay baler)	777	777	777	777	777	777
4) Tree Operational Expenses (h+i)	66	66	66	66	81	81
h) Inputs & Caring						
Weed control	13	13	13	13	13	13
Tree pruning	14	14	14	14	14	14
Pest management	16	16	16	16	16	16
Fertilization	23	23	23	23	23	23
i) Harvest						
Collecting (lumber)					15	15
5) Labor (j+k)	873	873	873	873	873	873

j) Personnel	864	864	864	864	864	864
k) Taxes on salaries* (12%)**	9	9	9	9	9	9
6) Depreciation (l)	0	0	0	0	0	0
l) Equipment	0	0	0	0	0	0
7) Input Taxes** (m+n+o)	545	545	545	545	548	548
m) Turnover (4% or 12%)**	141	141	141	141	144	144
n) Water (4 USD/m ³)**	390	390	390	390	390	390
o) Land (4 USD/ha)**	14	14	14	14	14	14
C) Earnings Before Interest and Taxes (A - B)	2,083	2,083	2,083	2,083	2,215	2,215
D) Interest and Loan Repayment (8+9)	0	0	0	0	0	0
8) Loan Repayment						
9) Interests						
E) Taxes (10)	156	156	156	156	166	166
10) Income Tax (15%)** [(C-D)*Tax]	156	156	156	156	166	166
F) Net Income (C - D - E)	1,927	1,927	1,927	1,927	2,049	2,049

***Social Tax** – 12%

** **Turnover Tax** – 4% from total sales when entities annual turnover does not exceed USD 100,000. 12% when annual turnover exceeds USD 100,000. **Water Tax** for agriculture lands – estimated at USD 4 per m³. **Land Tax** is based on soil fertility and the type of land (irrigated or dry-land) – estimated at USD 4 per hectare.

*** According to Presidential Decree No. 213 (August 31, 2022) 'On additional measures to improve the welfare of the population of the Republic of Karakalpakstan through the accelerated development of entrepreneurship, innovative technologies and infrastructures', enterprises in Karakalpakstan, including farming entities, will pay 50% of all 'Input & Turnover Taxes', as well as of 'Income Tax', and 1% of 'Social Taxes' from January 1st, 2023, until January 1st, 2028.

11. Capital Requirements and Financing

(EXAMPLE)

	Total Cost	Financing costs per year
G) Long-term investments	118	118 (1 year)
11) Property		
12) Structure		
p) Greenhouse/hotbed		
13) Machinery		
q) Trellis system (inc. installation)		
r) Tractor		
s) Tractor equipment		
t) Irrigation system (inc. installation)		
14) Tree planting		
u) Land preparation	70	
v) Analyses (soil, layout)	30	
w) Trees	18	
H) Medium- and Short-Term Investments		
15) Equipment		
I) Upfront Costs		
16) Registration		
17) Legalization		
18) Education and Training		
J) Total Capital Required	118	
K) Expenditures per year		118

12. Environmental Benefits

(EXAMPLE)

Years	1	2	3	4	5	6
L) Carbon Sequestration (tCO ₂)	0	0	0	0	1	1
19) Number of trees	100	100	100	100	100	100
20) Carbon sequestration per tree*	0	0	0	0	0.01	0.01

*Carbon sequestration per year estimated once the tree reaches maturity after the 4th year and before it has reached 30 years.

13. Profit to cover living expenses.

	Per month	Per year
M) Living expenses		
21) Food		
22) Clothing		
23) Health		
24) Education		
25) Others		
N) House expenses		
O) Social Security		
26) Insurance		
27) Pension		
P) Interests and Taxes		
28) Loan repayment and interests		
29) Taxes		
Q) Total household expenses (M+N+O+P)		