

SEQUOIA PASTORAL

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ORGANIC - AERATION AGROFORESTRY NET SYSTEM

INTRODUCTION.

I HAVE JUST SPENT THE LAST 30 YEARS DESIGNING THIS TECHNOLOGY ALL OF WHICH HAS BEEN SELF FUNDED PRIVATE RESEARCH. THE MISSION WAS TO DESIGN A SYSTEM WHICH WOULD STOP GLOBAL WARMING. I IMMEDIATELY BECAME A CARBON FARMER IN 1977, EVERY ACTION, EVERY DECISION WAS BASED ON SEQUESTERING THE GREATEST VOLUME OF CO₂ FROM THE ATMOSPHERE. THE OTHER REQUIREMENT WAS THAT THE TECHNOLOGY MUST HAVE NO NEGATIVE OUTCOMES , NO POLLUTION THAT WASN'T MITIGATED OR OFFSET, NO DAMAGE TO THE ENVIRONMENT, IT MUST ENHANCE EVERYTHING THAT IT COMES INTO CONTACT WITH. THE PROJECT IS CERTIFIED ORGANIC/ BIODYNAMIC. IT MUST BE ALL ENCOMPASSING COVERING EVERYTHING FROM THE CRADLE TO THE GRAVE. IT HAD TO BE BEYOND REPROACH, BEYOND RATIONAL CRITICISM.

ORGANIC-AERATION AGROFORESTRY NET SYSTEM.

THE SOIL IS DEVELOPED TO A DEPTH OF 2.1 M (7FT) OF BIOLOGICALLY ACTIVE TOPSOIL, BASED ON THE PREMISE THAT ROOTS OF PLANTS REQUIRE JUST AS MUCH OXYGEN AS ABOVE GROUND PLANT COMPONENTS REQUIRE CARBON DIOXIDE. THEREFORE I CREATE SOIL TO A DEPTH OF 2.1 M (7FT) WHICH GREATLY INCREASES MY SOIL CARBON BANK. THERE MUST BE A CONTINUOUS GASEOUS EXCHANGE FROM MY SOIL TO THE AIR ABOVE. THIS ALLOWS ME TO LAY DOWN LARGE AMOUNTS OF SOIL CARBON VERY RAPIDLY. I THEN GROW GRASSES, MONOCOTS SUCH AS CEREALS (WHEAT, BARLEY, SORGHUM AND THE LIKE) CONSTANTLY. IN CERTAIN LOCATIONS I CAN GROW 2 CROPS PER YEAR, ALL OF WHICH GO INTO ETHANOL PRODUCTION , THE GRAIN COMPONENT THAT IS! THE STRAW AND RESIDUE AND ROOTS ARE CONVERTED INTO ORGANIC CARBON BY THE SOIL BIOTA (BOTH FLORA AND FAUNA).

THESE CEREAL CROPS ARE PLANTED BETWEEN FORESTRY TREES 20 M (60FT) APART . THE SPACING ALONG THE ROW IS 2M (6FT 8IN). THIS CREATES A DENSITY OF 250 PER HECTARE(100 PER ACRE). THAT EQUALS 250 MILLION FORESTRY TREES ON THE CARBON FARM. THIS DESIGN CREATES AN OPEN FOREST WHICH MODIFIES THE MICROCLIMATE ENHANCING BOTH FORESTRY TIMBER PRODUCTION AND CEREAL PRODUCTION AND GREATLY INCREASES CO₂ SEQUESTRATION. THERE IS A SYMBIOTIC EFFECT CREATED BETWEEN THE GRASSES AND THE TREES . WIND SPEED IS REDUCED BY 50 %. SURFACE EVAPORATION IS REDUCED BY 9.7%. SOIL MOISTURE IS INCREASED BY 19.4%. THE SUMMER AIR TEMPERATURE IS ONE DEGREE COOLER AND THE WINTER AIR TEMPERATURE IS ONE DEGREE WARMER THEREBY INCREASING PRODUCTION AND SEQUESTRATION.

IT HAS BEEN SHOWN AROUND THE WORLD THAT AN AREA AS SMALL AS 500 HECTARES UNDER FORESTRY TIMBER CAN EXPECT HIGHER PRECIPITATION, UP TO 50% WHICH DRIVES SEQUESTRATION FURTHER, ESPECIALLY IN A COUNTRY SUCH AS AUSTRALIA.

IT WOULD BE DESIRABLE THAT ALL MACHINERY RUNS ON BIODIESEL. THE FORESTRY TREES SELECTED ARE DECIDUOUS AND HAVE VERY NUTRITIOUS LEAVES AND FLOWERS WHICH FALL TO THE EARTH EACH YEAR DRIVING SEQUESTRATION EVEN FURTHER, THEY HAVE A PARTICULAR CHARACTERISTIC WHICH ALLOWS CEREALS TO GROW UNDER THEIR CANOPY.

MY SYSTEM IS DESIGNED TO RAISE EARTHWORM LEVELS IN THE SOIL TO A MINIMUM 200 PER M² WHICH CREATES CONDITIONS WHERE, AT THAT DENSITY THEY ARE ABLE TO LAY DOWN CARBON RICH WORM CAST (COLLOIDS) TO 80 TONNES PER / HECTARE PER / YEAR. WORM CASTS BEING ONE OF THE RICHEST PLANT FOODS KNOWN TO MAN. THE MORE STRAW AND CROP RESIDUES I CAN PRODUCE THE HIGHER THE SOIL FLORA AND FAUNA POPULATIONS I CAN SUSTAIN THEREBY DRIVING SEQUESTRATION HIGHER AND HIGHER.

ALL THE MACHINERY USED ON THE CARBON FARM RUNS ON SUPER LOW GROUND PRESSURE RUBBER TRACKS TO REDUCE COMPACTION, INCREASE AERATION, REDUCE BIODIESEL CONSUMPTION AND INCREASE PRODUCTIVITY. THESE TRACKS REDUCE GROUND PRESSURE DOWN TO 3 TO 4 LBS PER INCH², AN ADULT MALE EXERTS ABOUT 4.5 LBS PER INCH², STATIONARY AND 9 LBS PER INCH² WHEN MOVING. THIS IS VITAL TECHNOLOGY TO KEEP THE SOIL BREATHING. OXYGEN IS VITAL TO LIFE, THIS GOES FOR THE SOIL AS WELL.

A COLLEAGUE OF MY MINE INCREASED HIS SOIL CARBON LEVEL FROM .9% TO 12.4% OVER 6 YEARS, WHICH IS ALMOST 2% PER YEAR. MY TECHNOLOGY WAS DESIGNED TO SEQUESTER THESE ORGANIC CARBON LEVELS DOWN TO 2.1 M (7 FT) DEEP INTO THE SOIL.

THIS IS THE MOST SOPHISTICATED ADVANCED CARBON FARMING SYSTEM IN THE WORLD.

THE BASIS OF MY TECHNOLOGY IS MEASURED BY SOIL RESEARCHERS FINDINGS THAT A 1% INCREASE IN SOIL ORGANIC CARBON EQUATES TO THE ANNUAL SEQUESTRATION OF 132 TONNES OF ATMOSPHERIC CO₂ PER / YEAR, PER / HECTARE IN THE TOP 300MM (1 FT) OF SOIL. MY TECHNOLOGY TAKES THAT CARBON DOWN TO 2.1 M (7 FT) AND BEYOND, WHICH EQUATES TO APPROXIMATELY 1,000 TONNES PER HECTARE PER / YEAR. YOU ALSO HAVE TO ADD THE FORESTRY SEQUESTRATION COMPONENT.

FORMAT.

THE CARBON FARM COVERING 1,000,000 HECTARES WHICH EQUALS 10,000 KILOMETRES², WHICH IS AN AREA 100 KILOMETRES BY 100 KILOMETRES. THAT EQUATES TO .6% OF THE

U.S.A ,S ARABLE LAND , 2 % OF AUSTRALIA,S ARABLE LAND OR 18% OF THE UNITED KINGDOMS ARABLE LAND. THERE ARE 11 MILLION HECTARES IN THE U.S.A (SUITABLE FOR CROP GROWING) SET ASIDE IN CRP,S (U.S GOVERNMENT “ CONSERVATION RESERVE PROGRAMS”) MY TECHNOLOGY IS DESIGNED TO SEQUESTER 1,000 TONNES PER / HECTARE PER / YEAR WHICH IS AN INCREASE OF 1 % IN SOIL ORGANIC CARBON PER / YEAR . WHICH EQUALS = 1 BILLION TONNES PER YEAR.

SEQUESTRATION OUTCOMES.

SOIL # 1,000,000 HECTARES @ 1,000 TONNES PER / HECTARE PER / YEAR. = ONE BILLION TONNES PER / YEAR.

FORESTRY # 1,000,000 HECTARES @ 250 TREES PER HECTARE .

VIABILITY – SOURCES OF INCOME.

CEREAL GRAIN 1,000,000 HECTARES @ 3 TONNES PER HECTARE = 3,000,000 TONNE @ \$ 250 = \$ 750 MILLION GROSS PER / YEAR.

FORESTRY CARBON CREDITS. 1,000,000 HECTARES @ \$250 PER / HECTARE PER / YEAR = \$ 2 50 MILLION GROSS PER YEAR.

SOIL CARBON CREDITS.

1,000,000 HECTARES @ 1,000 TONNES PER / HECTARE BY \$ 40 PER / TONNE = \$ 40 BILLION GROSS PER / YEAR.

BIODIVERSITY CREDITS ?

PHILANTHROPIC CREDITS ?

CERTIFIED ORGANIC FORESTRY TIMBER 1,000,000 HECTARES @ \$100,000 PER HECTARE NET @ YEAR TEN = \$ 100 BILLION NET. THE PLANTATION COPPICES BACK FOR ANOTHER HARVEST @ THE FOLLOWING YEAR 10.

AS YOU CAN SEE THIS GREEN TECHNOLOGY IS ALSO VERY GOOD BUSINESS. I REALISE THAT SOIL HAS NOT BEEN RATIFIED AS A CARBON SINK , I BELIEVE WE WILL CHANGE THAT.

FORESTRY CARBON SEQUESTRATION PALES INTO INSIGNIFICANCE WHEN SCRUTINISED IN THE HARSH LIGHT OF DAY AGAINST SOIL CARBON SEQUESTRATION. FORESTRY SIMPLY CAN NOT COMPETE UNDER MY TECHNOLOGY. THAT'S NOT TO SAY THAT IT IS NOT A VITALLY IMPORTANT COMPONENT TO MY TECHNOLOGY.

I AM WORKING WITH 21, 000 M2 OF BIOLOGICALLY ACTIVE SOIL PER / HECTARE. OVER THE CARBON FARM THAT'S 21

BILLION M², THAT'S A VERY LARGE CARBON SINK , ESTIMATED TO WEIGH 31 BILLION TONNES OVER THE SIZE OF THE CARBON FARM.

ALSO NOT TO DISMISS THE VALUE OF THE FORESTRY NET EFFECT WHICH IS ALSO AN EXTREMELY IMPORTANT COMPONENT OF MY TECHNOLOGY. ALL THE FORESTRY TIMBER IS HIGH PRUNED TO 8M (26 FT 6 IN) FOR CLEAR WOOD PRODUCTION, WHICH EQUALS NO KNOTS , HIGHER VALUED TIMBER. THE ROWS ARE PLANTED IN A NORTH SOUTH ORIENTATION WHICH ALLOWS THE SUN TO SHINE DOWN BETWEEN THE TREES INCREASING CEREAL PRODUCTION AND LEADING TO GREATER CO₂ SEQUESTRATION.

THE CARBON FARM WAS DESIGNED TO GENERATE ALL ITS OWN POWER FROM LARGE WIND GENERATORS. ALL THE BUILDINGS TO BE CONSTRUCTED FROM STRAW BALES AND TIMBER GROWN ON THE FARM . BUILDINGS CONSTRUCTED FROM SUPER JUMBO STRAW BALES WHICH ARE 2.4 M LONG , 1.2M WIDE AND 1.2M HIGH WHEN COMBINED WITH DOUBLE GLAZED WINDOWS CAN AVERAGE 20 DEGREES C (70 DEGREES F) YEAR ROUND IN AUSTRALIA WITHOUT ANY ADDITIONAL HEATING OR COOLING.

I HAVE DESIGNED CUSTOM BUILT AERATOR – PLANTERS WHICH ARE CAPABLE OF AERATING TO 2.1M DEEP AND AT THE SAME TIME PLANTING CEREAL SEED AT 10MM DEEP. THESE AERATOR – PLANTERS INCREASE SOIL TEMPERATURES BY APPROXIMATELY 10 DEGREES C ABOVE DISTRICT AVERAGES, WHICH ELIMINATES ANY WINTER DORMANCY IN PLANT GROWTH AS SOIL BIOTA TENDS TO BECOME DORMANT WHEN SOIL TEMPERATURES DROP BELOW 10 DEGREES C . THIS ENABLES ME TO SEQUESTER CO₂ 365 DAYS PER / YEAR. DEEP BIOLOGICALLY ACTIVE SOIL CAN BE CREATED IN A FEW YEARS AS OPPOSED TO SOIL SCIENTISTS SUGGESTING IT WOULD TAKE UP TO 5,000 YEARS. A FARMER IN THE U.S.A RECENTLY GREW A 30 TONNE TO THE HECTARE CORN / MAIZE GRAIN CROP, HIS EARTH WORM COUNT WAS UP TO 800 PER M² THAT EQUATES TO 320 TONNES OF COLLOIDAL WORM CASTS PER / HECTARE PER / YEAR LAYED DOWN IN THE SOIL. MY TECHNOLOGY IS STATE OF THE ART , DIRECT DRILLING , ONE PASS PER / YEAR OR CROP. THE DESIRED OUTCOME IS TO HAVE PLANTS GROWING VIGOROUSLY 365 DAYS A YEAR. THERE MUST BE NO FALLOW PERIOD NOR LIVESTOCK ON THE CARBON FARM. THE GROWING OF THE CEREALS PREPARES THE SOIL FOR THE FOREST SOIL CONVERSION PROCESS.

MY TECHNOLOGY IS NOT A MONOCULTURE THE CEREAL IS AERATOR – PLANTED INTO A MIXED STAND OF NATIVE AND EXOTIC SPECIES SELECTED FOR THEIR SOIL BUILDING QUALITIES AND CARBON SEQUESTRATION PERFORMANCE.

BUSINESS STRUCTURE .

I WOULD SUGGEST A PRIVATE COMPANY TO RAISE THE START UP CAPITAL THEN THE BUSINESS WOULD RUN ON A COMMERCIAL BASIS.

GROSS POTENTIAL INCOME PER / YEAR.

GRAIN - RANGE \$ 750 MILLION TO	\$ 1.5 BILLION.
FORESTRY CARBON CREDITS	\$ 500 MILLION.

SOIL CARBON CREDITS

\$ 40 BILLION.

CERTIFIED ORGANIC TIMBER @ YEAR 10 \$ 100 BILLION.

KEY POINTS.

- # ANNUAL GRAIN PRODUCTION FUNDS THE FORESTRY COMPONENT.
- # THE CARBON FARM IS CERTIFIED ORGANIC / BIODYNAMIC.
- # ALL GRAIN PRODUCTION GOES INTO ETHANOL .
- # ALL THE FARMING PLANT/ EQUIPMENT TO RUN ON BIODIESEL 100.
- # ALL THE BUILDINGS, HOUSES, SHEDS OFFICES ARE OF (HEALTHY HOUSE DESIGN AND CONSTRUCTION).
- # THIS WILL STOP GLOBAL WARMING IN ITS TRACKS, GIVING MANKIND TIME TO CHANGE TO GREENER TECHNOLOGIES.
- # IT IS A GREEN BLUEPRINT FOR THE FUTURE IN TERMS OF STATE OF ART ORGANIC CARBON FARMING TECHNOLOGY , GOING WAY BEYOND WHAT MOST OF US HAVE EVER SEEN BEFORE.
- # IT IS ETHICALLY, ENVIRONMENTALLY AND ECONOMICALLY SOUND.
- # I BELIEVE MY TECHNOLOGY AND THE SOIL ARE THE KEY TO OUR SURVIVAL.
- # THERE ARE NO NEGATIVE SIDE EFFECTS FROM MY TECHNOLOGY, ONLY POSITIVES AND IT IS VIABLE.
- # ONE OF THE ONLY INPUTS FROM OUTSIDE THE CARBON FARM IS BIODIESEL, WHICH COULD BE GROWN ON FARM, THE ONLY REASON I DON'T RECOMMEND IT, IS THAT GENERALLY CROPS WHICH PRODUCE BIODIESEL DON'T PRODUCE AS MUCH ORGANIC MATTER, THEREFORE CO2 SEQUESTRATION.
- # IT WOULD BE MY INTENTION TO MANAGE THE CARBON FARM FOR THE REST OF MY LIFE, I AM 49 YEARS OLD NOW.
- # I GROW ALL MY CARBON IN SITU , NOTHING IS TRANSPORTED IN.
- # I HAVE BEEN PREPARING TO DO THIS VERY PROJECT FOR 25 YEARS, JUST WAITING FOR THE OPPORTUNITY TO RAISE THE CAPITAL TO INSTIGATE THE TECHNOLOGY.
- # MY INVENTION IS DESIGNED TO OPERATE IN A RAIN- FEED SITUATION, NO IRRIGATION IS REQUIRED OR DESIRED, I STORE MY IRRIGATION IN THE SOIL CARBON, AS IT FALLS FROM THE SKY.

- # ANOTHER REASON MY INVENTION WORKS SO EFFECTIVELY IS DUE TO THE FACT THAT I AM ABLE TO LOWER THE SOIL BULK DENSITY TO SUCH A LEVEL THAT DELICATE GRASS ROOTS CAN PENETRATE TO EXCEPTIONAL DEPTHS, ALLOWING ME TO SEQUESTER ENORMOUS AMOUNTS OF CARBON DEEP INTO THE SOIL.
- # 90% OF FARMING AROUND THE WORLD IS CARRIED OUT IN THE TOP 50MM (2 IN) OF SOIL WHEREAS MY DESIGN UTILIZES 2,100MM OR (7 FT) , WHICH IS AN ENORMOUS DISCREPANCY.
- # MORE RESEARCH IS NOT REQUIRED TO TEST MY TECHNOLOGY AS IT HAS BEEN OPERATING FOR 25 YEARS, IT IS READY TO PERFORM RIGHT NOW.
- # THE SYSTEM WORKS LIKE THIS, THE DEEPER THE BIOLOGICALLY ACTIVE SOIL, THE LARGER THE PLANT ROOTS, AND CORRESPONDINGLY, THE LARGER THE ABOVE GROUND PLANT COMPONENTS WHICH RESULTS IN MORE ORGANIC MATTER, AN THUS GREATER CO2 SEQUESTRATION.

RAMIFICATIONS.

I BELIEVE THIS TECHNOLOGY WILL REACH MUCH FURTHER THAN ITS MOST IMPORTANT TASK OF HALTING CLIMATE CHANGE. THE IMPACT HAS THE POTENTIAL TO CHANGE ALSO THE COURSE OF AGRICULTURE , NOT BY FORCE BUT BY SHEAR ECONOMIC PRESSURE AND A BETTER WAY OF DOING THINGS. MY TECHNOLOGY IS SO COMPREHENSIVE, IT ENCOMPASSES EVERYTHING FROM THE CRADLE TO THE GRAVE. NOTHING HAS BEEN OVERLOOKED. I EXPECT THIS CARBON FARM TO BE THE MOST IMPORTANT IN THE HISTORY OF THE WORLD.

SUMMARY.

SOIL IS THE KEY TO MY TECHNOLOGY.

“ORGANIC AERATION AGROFORESTRY NET SYSTEM”

IT IS A VERY RAPID PROCESS IF YOU FEED THE SOIL BIOTA EXTREMELY LARGE VOLUMES OF ORGANIC MATTER THEY ARE CONVERTED VERY QUICKLY INTO COLLOIDAL CARBON (HUMUS) THE SECRET OF MY TECHNOLOGY. THIS IN TURN DRIVES THE ENGINE OF MY INVENTION , THE MORE YOU FEED IT THE HARDER IT GOES. IT IS SELF PERPETUATING, ROOTED DEEPLY IN THE LAWS OF NATURE . NO MACHINE CAN COMPETE WITH IT.

MY INVENTION WILL SEQUESTER THE EXCESS CO₂ FROM THE ATMOSPHERE AND THE FAR RANGING EFFECTS WILL GO FAR BEYOND SAVING THE PLANET, IT ALSO HAS THE ABILITY TO REACH BILLIONS OF PEOPLE AND GUIDE THEM TO A BETTER WAY OF LIVING AND EXISTING ON OUR PLANET.

JOHN WARE DOWLING .

THE SOIL WATER HOLDING CAPACITY OF MY TECHNOLOGY AND THE RAMIFICATIONS OF ITS PRACTICE

ONE UNIT OF HUMUS IS ABLE TO STORE 4 TIMES ITS WEIGHT IN WATER. A SOIL WITH 1% ORGANIC MATTER IS CAPABLE OF STORING AN EXTRA 144,000 LTS P/HA IN THE TOP 300MM. MY TECHNOLOGY IS DESIGNED TO LAY DOWN CARBON TO A DEPTH OF 2.1 M (7 FT). WHICH IS THEN ABLE TO STORE AN EXTRA 1,000,000 LTS WHICH IS A MEGALITRE OF WATER IN THE SOIL.

THE PRAIRIES IN THE U.S.A HAD AN ORGANIC MATTER READING WHEN THE FIRST WHITE SETTLERS ARRIVED OF 22% , SADLY IT IS 5% AND FALLING . A SOIL WITH 22% ORGANIC MATTER LAYED DOWN TO 2.1 M (7 FT) COULD CONCEIVABLY STORE AN EXTRA 22 MEGALITRES OF WATER P/ HA. THAT'S ENOUGH EXTRA STORED WATER TO GROW 9 IRRIGATED CEREAL CROP EQUIVALENTS IF 2.4 MEGALITRES IS APPLIED P/HA. MY TECHNOLOGY WOULD ALLOW US TO GROW A VAST ARRAY OF IRRIGATED CROPS FROM STORED PRECIPITATION IN THE SOIL.

AS YOU CAN SEE MY TECHNOLOGY WILL NOT ONLY STOP CLIMATE CHANGE BUT WILL ALSO REVOLUTIONIZE (FOOD ,FIBER , TIMBER AND BIO – FUEL PRODUCTION) AGRICULTURE WORLD WIDE , IF IT WAS IMPLEMENTED.

JOHN WARE DOWLING.

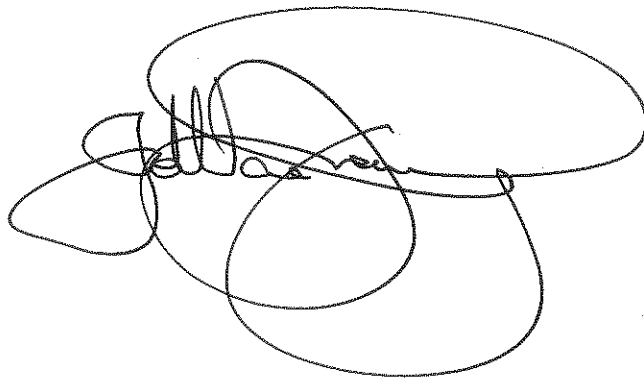
A large, stylized handwritten signature in black ink, appearing to read 'John Ware Dowling', with several overlapping loops and flourishes.

Table 1. Change in the capacity of soil to store water (litres/ha) with changes in levels of soil organic carbon (OC) to 30 cm soil depth. Bulk density 1.2 g/cm³

Change in OC level	Change in OC (kg/m ²)	Extra water (litres/m ²)	Extra water (litres/ha)	CO ₂ sequestered (t/ha)
1%	3.6 kg	14.4	144,000	132
2%	7.2 kg	28.8	288,000	264
3%	10.8 kg	43.2	432,000	396
4%	14.4 kg	57.6	576,000	528