

Rising from the ashes – the Araju Açá development programme

(Araju açá means “on heaven’s side”, in Guarani; name given by the participants)



Introduction

Just two months ago two thirds of Sitio Luciana, a 15 ha rural property in Dourados county were burnt to the ground. Fourteen years ago this was just a cattle feeding field, but now half of it is biodiversified agroforest. Small trees and bushes, both planted and naturally sprung, were burnt, small animal carcasses were still visible within the ashes. The fire was willful, some of the youth from the nearby indigenous village were responsible. A couple of days later, a young married man, Geovanir, of the Guarani-Kaiowa people, living just across the dirt road that separates Sitio Luciana from the indigenous reservation, visited Antonio Weber, the owner, saying that he felt ashamed for what his people had done, but that, he could assure, none were from his family, they were misled youth, under the effects of drugs and booze. He said that he would assist in any way he could, so that we could have a better chance of preventing such happening in the future.

Antonio is the present president of our Institute for Environment and Development-IMAD (www.imad.org.br) and - as all its members were concerned with the future of this property, which is an outstanding example of a biodiverse agroforest and produces much organic vegetables – a meeting and technical site visit was convened at which Geovanir and IMAD members, mostly faculty staff, were invited. Geovanir said that many fires were also started in the lands occupied by his family and invited us to also visit these areas and see what remedial and counter measures we could think and plan together. He also invited us over for lunch for the next weekend.

The visit was very special, as strong friendship ties sprung naturally as we had a common enemy, ignorance and harassment practices from drug dealers and corrupt leadership. After taking stock of most of the area occupied by this small group of around 15 families, we had a wonderful lunch together, with jokes, playing with the charming children, relaxing in a very warm atmosphere. So we started planning some common actions, where IMAD would be able to contribute with combined actions to establish a small greenhouse for local forest seedlings production and forest recovery, a number of organically grown vegetable production aisles, fostering local income generation with traditional arts and crafts production and self-organization procedures. A small creek provides the necessary water for plantings.

This was just two months ago. Now we have several vegetable production areas, a whole hectare set up for an agroforestry system, a mini-greenhouse to shelter and grow native trees and bushes species - which will provide basic raw materials for their arts and crafts - and quite a lot of collars, bracelets, painted skirts and t-shirts, bows and arrows and small ornamental axes, all for sale. In addition, many tree species have been planted around the small creek which is devoid of riparian forest protection.

Collective Centre for Development

The conception of the Centre for Collective Development entails a local educational structure intent on generating, applying and disseminating knowledge, here understood as a marriage between traditional Guarani indigenous knowhow and western scientific practices, viewed from a systemic and holistic perspective, not in a fractioned, segmented approach. Thus, the designation “Centre for Collective Development” might prove to become, in due time, appropriate for its goals.

To become protagonists in the construction of a civilizatory process, a vision of spiritual, moral and intellectual excellence should be created and maintained amongst its participants, schooled and unschooled alike, by a constant action and reflection mechanism and dynamics. All should be considered true collaborators and all decisions arrived at by means of attentive, respectful and creative consultation amongst all actors involved. Similar to a tree, or any organic structure, each cell is specialized for its function and there is no pecking order, but a wholesome perception that true collaboration, without special position or authority, or individual interests, is in itself a great asset and already offers the best possible rewards. All cells offer and maintain collective health and best performance when aware of their special and unique contribution to overall wellbeing. It's a gain-gain situation and the powerful force of this living example attracts other contributors, amplifying gains and outreach.

We are now building, just across the road from these families, a small base for IMAD's activities – traditional prayers and dances, body painting, school reinforcement, carpentry and cabinet making simple techniques, project planning and organization, arts and crafts space and selling point – which is now just an initial part of the future building – our Collective Centre for Development, specially conceived to serve regional indigenous communities - which will house in-training courses, arts and crafts display and selling area, small auditorium for 60 people, local cuisine and restaurant by the local families, sleeping and resting quarters, two small apartments for course coordinators, offices and small cabinet making venture.

The building is shown in Figure 1 and its ground and upper floor complete plan in Figures 2a and 2b



Figure 1 – IMAD's Collective Centre for Development proposed building in Dourados rural area, on the side of the Bororo Guarani-Kaiowa families area.

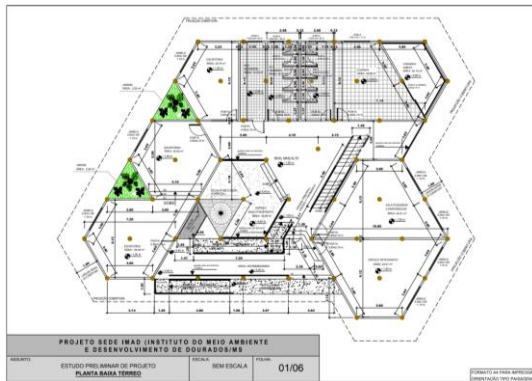


Figure 2a – IMAD’s Collective Centre for Development proposed building, ground floor plan.

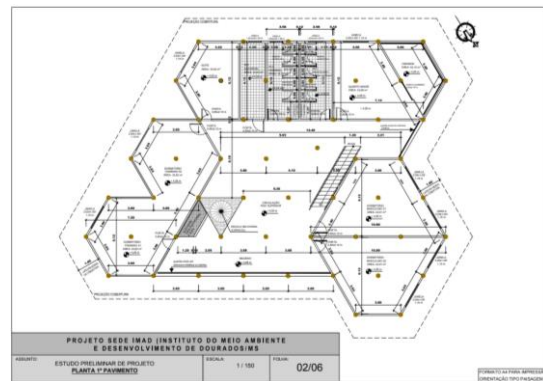


Figure 2b – IMAD’s Collective Centre for Development proposed building, upper floor plan.

The whole will serve as our operating base, will be staffed primarily by local Guarani-kaiowa men and women and will receive simple furniture and decoration in accordance with Guarani usages.

Vegetable gardens, orchards and chicken raising food support base

Already after just two months of existence, a number of vegetable gardens patches are producing lettuce and other greens (Figure 4). These will be enhanced with an agroforestry one-hectare lot, with more than 20 local fruit producing tree species and 10 exotic fruit species. Within the tree lines, manioc, sweet potatoes and other vegetables are starting to be grown to provide basic foodstuff.



Figure 3 – One of the many meetings which led to the establishment of orchards, vegetable gardens and arts and crafts production.



Figure 4 – Vegetable gardens. Products are already been consumed, sold and a barter system is now ongoing.



Figure 5 – Some of the arts and crafts produced.



Figure 6 – Making collars, bracelets, earrings.



Figure 7 – Beginning a women's arts and crafts association.



Figure 8 – Children are our precious future.



Figure 9 – Everyone produces different patterns and creations.



Figure 10 – Functional products are part of everyday life.

The way to sustainable production and consumption patterns is not an easy one, every community must find its way to fit within its environmental and sociocultural and economic constraints. Adjustment has been one of the foremost characteristics of the Guarani-Kaiowa people in their 500 years of cultural and physical survival within an oppressive white-dominated, Eurocentric society. More than 50,000 of them populate the Southern Cone of the Mato Grosso do Sul Brazilian State, with Dourados, a 230,000 people town, as its regional centre.

Construction has started, now we need backup

On a small piece of land, given under a formal lending agreement by the Sitio Luciana family property, a small room 6 x 3 meters, small kitchen area and bathroom are now being built. It is the beginning of our Collective Centre for Development, as presented above. IMAD already invested two thirds of its savings, about US\$ 6,000, and is now trying to finish employing a simple bio-architecture construction technique.

This first base, 50 yards from the Guarani families, will house two of IMAD’s staff members and an office on a minimalist basis. At the same time, an ample covered open area will be the venue for meetings, courses, events and in-training seminars. Its sides will be sheltered from the wind, sun and rain by simple woven bamboo curtains. Initially starting as an experimental school, integrating traditional Guarani knowledge with western science and technology, this educational institution will develop into a rural university, offering courses for small farmers, indigenous people and afrodescendent rural settlements.



Figure 11 – These girls and boys will be served by the Collective Centre for Development.

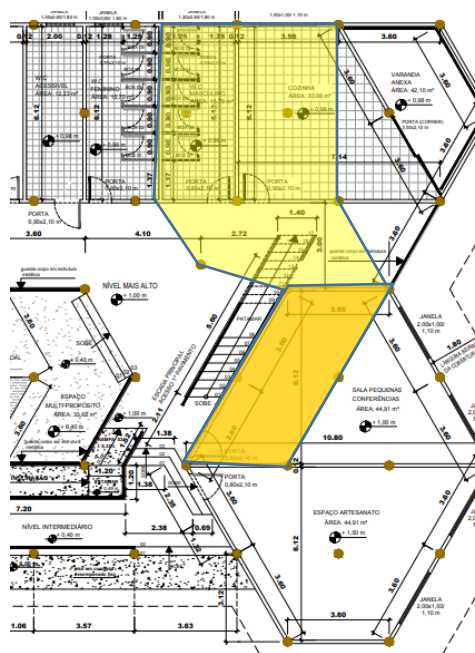


Figure 12 – The yellow area houses bathroom, kitchen and corridor, to support the office space (in orange).



Figure 13 – IMAD’s initial 6x3 m rhomboid office space receives its foundations.



Figure 14 – These 6 wooden pillars represent the orange rhomboid 6 x 3 m room, IMAD’s initial office space.

Using science and technology for the Kaiowa way of life

Are the Guarani-Kaiowa losing their cultural identity or are they adapting to western ways and technology? The second possibility seems to be the case. Kaiowa are very fast learners and show excellent dexterity in adopting western technology for their needs. This doesn’t mean they are losing their cultural base, but that, in fact, they are making conscious decisions to use technology for their own way of life and their own personal and collective goals. The idea here is to assist them in making their own choices by experimenting together different solutions. There is a whole new area of social anthropology called “socio-technical systems”, which basically proves that native populations adopt external technologies after a trial and error process which is quite fast and dealt with in a natural way.

So far, suggestions coming from IMAD’s multidisciplinary team have been partially adopted and integrated into their production methods in a natural and creative way. Questions are raised and alternative solutions are identified together within the consultation process. Possibilities are tested and the more successful solution adopted as a reference model to be applied and adapted to novel situations. Within the last two



months several situations prompted different solutions and the out coming selections proved effective.

Vision of the future and present needs from observed demands

Although it is a difficult matter to make development choices within the present moment and its many challenges - like inter-cultural relationships, dealing with progressive climate crises, which force us to build resiliency within all production and consumption processes, post-pandemic food and nutritional security and economic survival, building conscientious systems to maintain and boost biodiversity for ecosystem services and natural resource use – we are at a great advantage here because we can still count with traditional knowledge and wisdom, which is still present in many individuals, men and women, that form the families IMAD has been working with and relating to.

The clock is though clicking and the elderly have little time left to pass on their knowledge and ways, so that there is a great sense of urgency in the air. To this purpose IMAD has developed a number of ideas, in consultation with the families involved, trying to equate the above discussed questions. It has come up with a line of projects, aligned with observed demands, within present global constraints, that are structured into short, medium and long range goals within four major development phases:

- 1) immediate and zero priority;
- 2) forming a solid structural programme base (capacitation building, infrastructure development, fund raising and fostering partnerships;
- 3) consolidating local capacities and
- 4) providing administrative know-how and long range planning and adaptation, on the line of a “learning institution” (Peter Senge, *“The Fifth Discipline”*).

Immediate needs

The target audience is made up of indigenous nuclear families of the Guarani-Kaiowa ethnic group, residing in Aldeia Bororó, located in the Indigenous Reserve of Dourados (RID), municipality of Dourados-MS. Approximately 50 people, including children, youth and adults.

In the various meetings and technical visits carried out by the IMAD team with these families, four main components were outlined from this consultation process, consisting of:

1. The implementation of a demonstrative nursery;
2. The implementation of an agroforestry system – SAF-, demonstrative;

3. A start of a degraded area recovery plan (PRADA);
4. The construction of a small studio for the production of indigenous handicrafts, with the proposal to create a women's association and a business plan.

Demonstrative Nursery and SAF

The demonstrative nursery, of native tree species, will be implemented in an area loaned by Sítio Luciana to IMAD and the proposed Agroforestry System, to be implemented near the homes of the families involved, aims to improve the diet, with supplementation of vitamins and proteins. edible fruits and vegetables, increasing the production capacity of functional, ornamental and/or ritualistic implements (made from seeds, vines, fruits and other vegetable fibers), improving soil conditions and local microclimate and water retention around springs and nearby waterways. The different tree and shrub species were chosen in consultation with the families for the purposes described above.

In the medium and long term, this SAF will be able to provide both food and another form of livelihood, in the production of typical handicrafts and indigenous crafts based on the traditional knowledge of their community and techniques for improving them through the voluntary support of qualified professionals associated with the IMAD, thus increasing the possibility of marketing the products.

It is understood that this project can provide important data for research in Agroforestry Systems and should be evaluated and monitored according to the best scientifically consolidated techniques.

Degraded Area Recovery Plan (PRADA)

According to the guidelines of the Chico Mendes Institute for Biodiversity Conservation - ICMBio, Serra da Bocaina National Park (Ministry of Environment, 2013), in the document: Presentation Guide for Land Degraded Area Recovery Plan (PRAD), the PRAD must include the following components:

- a) Characterization of the degraded area and surroundings, as well as the agent(s) causing the degradation;
- b) Choice of recovery proposal for the degraded area;
- c) Definition of the parameters to be retrieved based on an area adopted as a reference or control;
- d) Adoption of a recovery model;
- e) Details of the techniques and actions to be taken for the recovery;
- f) Inclusion of a proposal for monitoring and evaluating the effectiveness of the recovery; and
- g) Forecast of inputs, costs and schedule for the execution and consolidation of the recovery.

Workshop for craft production

Most adult women in these families are familiar with various types of crafts, such as kaiowa jewelry (necklaces, bracelets, earrings, ornaments), fabric painting, clay work,



mats and straw hats. We collected some clay samples at 4 points of the stream that bathes the home area of these families and we are carrying out some tests.

Relevant Information for Proposal Evaluation

This proposal fits into the vision established by the Environmental Restoration and Agroforestry Systems project in the Indigenous Reserve of Dourados-RASAF-, recently proposed, but not implemented, by IMAD, in partnership with the Federal University of Grande Dourados-UFGD-, and the Center of Agricultural Research of Embrapa-CPAO/Embrapa.

The territory of indigenous communities has seen a progressive mischaracterization of their cultural and socio-environmental conditions. Most of the springs within the area are being silted up and in the process of being eliminated due to constant deforestation and expansion of the soybean crop, and pollution by agricultural defensives has reached frightening proportions. Structuring and integrated energetic measures become necessary by all government levels, such as the survey and mapping of extended families, understanding the social organization of the work patterns of these ethnic groups, allowing for the increase in the area available to them and the redefinition of the power structure exercised by the dominant groups associated with the cultivation of soy. Supporting the emergence of natural leaders, would facilitate their decision-making process, towards a better isonomy in the use of land and natural resources present within it. Initiatives such as the development of Agroforestry Systems-AFS, associated with the management of water bodies, through the reconstitution of riparian forests, restoration of springs and structuring ecological corridors must be implemented as soon as possible. The traditional indigenous planting techniques in consortia of shrub and woody plants, fruit-bearing in short, medium and long cycles, edible and of varied uses, need to be rescued and combined with the development of AFS practiced by the culture of non-Indians.

The need for integration between these ancient indigenous techniques and scientific knowledge adapted to tropical agriculture for small producers is a significant advance in our knowledge and its practical and appropriate application. The cycle and rhythm of life of indigenous culture needs to be recognized, respected, understood and allowed to support technical decisions in the management of natural resources and the construction of a better quality of life for these populations, so historically and culturally damaged.

Benefits:

Scientific impacts: Support for research/teaching/extension of involved universities.

Technological impacts: Development of Agroforestry Systems-SAF, planting of family plots for local production of basic foods, development of added value through the production of indigenous handicrafts, based on plantations of trees and shrubs of native essences, furnishing fibers, scents and colouring.



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Economic impacts: Production of subsistence food products, with the surpluses being marketed by agroecological networks.

Social impacts: Development of an association of indigenous women to produce handicrafts, buy and sell basic subsistence products. Generating self-esteem and self-help projects of the women and families involved.

Environmental impacts: Recovery of degraded springs and riparian forests, increase in plant and animal biodiversity through the construction of ecological corridors in the Bororó village, stagnation of advanced erosion processes and the consolidation of Agroforestry Systems. Decrease in the local annual average temperature and increase in air relative humidity.

Proposed 1 year budget

Ref.	Description	Unit Cost in US\$	Units	Tot (US\$)	%
1	Nursery (product.capacity 5,000 seedlings cd 3 months; 10mx8m)	1,826.92	1.00	1,826.92	10.56
2	Ateliê Artisanal production (bioconstruction; 6m x 4m)	1,538.46	1.00	1,538.46	8.89
3	Recovery of degraded areas (seedlings)	1.06	2,000.00	2,115.38	12.22
4	Recovery of degraded areas (transport)	346.15	1.00	346.15	2.00
5	Agroforestry System (demonstration unit 50mx40m)-seeds	230.77	1.00	230.77	1.33
6	Agroforestry System (demonstration unit 50mx40m)-fruit seedlings	11.54	100.00	1,153.85	6.67
7	Water tank and structure	346.15	1.00	346.15	2.00
8	Pump to draw water from the stream (2HP)	576.92	1.00	576.92	3.33
9	Pipes	192,31	1.00	192.31	1.11
10	Pickup truck fuel (125 liters/month * 12 months; 10km/Liter)	0,96	1,500.00	1,442.31	8.33
11	Project coordination (BRL 2,000.00 for 12 months)	346.15	12.00	4,153.85	24.00
12	Social fees and taxes	138.46	12.00	1,661.54	9.60
13	Administrative costs	1,723.08	1.00	1,723.08	9.96
14	Grand Total			17,307.69	100.00

Forming a structural programme base



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Results depend on means and means involve both specialized human resources, physical infrastructures (spaces for different functions and uses, water, energy supply and Internet services, tools, equipment, furniture), maintenance and running costs, yearly taxes and dues.

Basic training, administration and living and accommodation facilities. Equipment and furniture, water and energy supply, administration and maintenance costs, basic supplies.

Consolidating local capacities

To consolidate local capacities an adequate type of education should be provided, starting with basic courses, including technical skills within an environment adapted to Guarany culture and needs. Priorities are identified through an ongoing consultation process which takes into account their sociological structure, their living hood and economic sociopolitical power structure and pressures. Every planned action and relative budget and timeframes are to be ascertained and agreed upon by stakeholders, the local families specific programmes and prospective partners and funding sources are constantly sought.

An initial educational framework might take this form and evolve organically towards a more complex and permanent one, according to local partnerships and arrangements and institutional support. So, we present two other budgets, for a mid and a long-term proposal

Centre for Collective Development Budget – Mid-Term Proposal

1	administration (yearly costs)	US\$			US\$
1.1	general manager	1,500.00	months	12	18,000.00
1.2	data processing and programming	1,000.00	months	2	2,000.00
1.3	caretaker	800.00	months	1	800.00
1.4	Sub-total				20,800.00
	programme and project development nucleus (yearly costs)				
2					
2.1	research coordination	2,000.00	months	12	24,000.00
2.2	junior assistant	1,400.00	months	12	16,800.00
2.3	secretary	1,000.00	months	12	12,000.00
2.4	Sub-total				52,800.00
	social networking (yearly costs)				
3					
3.1	internet expenses	500.00	yearly	1	500.00
3.2	visual arts	500.00	months	12	6,000.00
3.3	Sub-total				6,500.00
	staff (yearly costs)				
4					
4.1	teaching/extension/research coordination	2,000.00	months	12	24,000.00
4.2	teachers	1,200.00	people	3	43,200.00



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4,3	lab technician	800.00	people	1	9,600.00
4,6	Sub-total				76,800.00

5	travel (yearly costs)				
5,1	within Brazil (networking)	400.00		2	800.00
5,2	overseas (fund raising)	4,000.00		1	4,000.00
5,3	Sub-total				4,800.00

6	construction (initial investment)	US\$/m²	Units	Quantity	Sub-Total
6,1	class and dorm spaces 200m2	300.00	m ²	200	60,000.00
6,2	well and water pump	2,000.00	um,	1	2,000.00
6,3	lighting (external)	2,000.00		1	2,000.00
6,4	security	3,000.00		1	3,000.00
6,5	Sub-total				67,000.00

7	equipment (initial investment)				
7,1	4 weel vehicle	24,000.00		1	24,000.00
7,2	portable generator	3,000.00		1	3,000.00
7,3	medical kit	500.00		3	1,500.00
7,4	water ki	500.00		2	1,000.00
7,5	softwares	5,000.00		1	5,000.00
7,6	laptops	500.00		2	1,000.00
7,7	datashow	200.00		2	400.00
7,8	virtual whiteboard	1,500.00		1	1,500.00
7,9	Sub-total				37,400.00

	General Yearly Budget	US\$
1	administration (yearly costs)	20,800.00
2	programme/project devpmnt, nucleus (yearly costs)	52,800.00
3	social networking (yearly costs)	6,500.00
4	staff (yearly costs)	76,800.00
5	travel (yearly costs)	4,800.00

Sub-totals (US\$) 161,700.00

	Initial Investments	
6	Construction	67,000.00
7	Equipment	37,400.00

Sub-totals (US\$) 104,400.00

Grand Total (US\$) 266,100.00

Long range planning

Centre for Collective Development Long Term Budget

		US\$			US\$
1	administration (yearly costs)				
1,1	general manager	1,500.00	months	12	18,000.00
1,2	data processing and programming	1,000.00	months	2	2,000.00
1,3	salesman	1,000.00	months	2	2,000.00
1,4	caretaker	800.00	months	1	800.00
1,5	driver	600.00	months	2	1,200.00
1,6	Sub-total				24,000.00
2	programme and project development nucleus (yearly costs)				
2,1	research coordination	2,000.00	months	12	24,000.00
2,2	senior adviser	1,800.00	months	12	21,600.00
2,3	junior assistant (sociocultural area+ junior assistant (biology and ecology area)	1,400.00	months	12	16,800.00
2,4	junior assistant (food and energy prdn area)	1,400.00	months	12	16,800.00
2,5	secretary	1,400.00	months	12	16,800.00
2,6	secretary	1,000.00	months	12	12,000.00
2,7	Sub-total				108,000.00
3	social networking (yearly costs)				
3,1	internet expenses	500.00	yearly	1	500.00
3,2	boost up expenses	200.00	months	12	2,400.00
3,3	visual arts banners, flyers, outdoors, visual material	500.00	months	12	6,000.00
3,4	material	500.00	months	12	6,000.00
3,5	Sub-total				14,900.00
4	staff (yearly costs)				
	teaching/extension/research				
4,1	coordination	2,000.00	months	12	24,000.00
4,2	teachers	1,200.00	people	8	115,200.00
4,3	lab technicians	800.00	people	3	28,800.00
4,4	cleaners	400.00	people	2	9,600.00
4,5	kitchen	500.00	people	2	12,000.00
4,6	Sub-total				189,600.00
5	travel (yearly costs)				
5,1	within Brazil (networking)	400.00		8	3,200.00



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5,2	overseas (fund raising)	4,000.00	2	8,000.00
5,3	Sub-total			11,200.00

6	construction (initial investment)	US\$/m²	Units	Quantity	Sub-Total
6,1	class and dorm spaces 400m2	300.00	m ²	400	120,000.00
6,2	well and water pump	2,000.00	um,	1	2,000.00
6,3	landscaping	4,000.00		1	4,000.00
6,4	lighting (external)	2,000.00		1	2,000.00
6,5	security	3,000.00		1	3,000.00
6,6	Sub-total				131,000.00

7	equipment (initial investment)				
7,1	4 weel vehicle	24,000.00		1	24,000.00
7,2	portable generator	3,000.00		1	3,000.00
7,3	medical kit	500.00		3	1,500.00
7,4	water ki	500.00		2	1,000.00
7,5	drone	15,000.00		1	15,000.00
7,6	softwares	20,000.00		1	20,000.00
7,7	laptops	500.00		4	2,000.00
7,8	datashow	200.00		5	1,000.00
7,9	virtual whiteboard	1,500.00		2	3,000.00
7,1	Sub-total				70,500.00

General Yearly Budget

US\$

1	administration (yearly costs) programme and project	24,000.00
2	development nucleus (yearly costs)	108,000.00
3	social networking (yearly costs)	14,900.00
4	staff (yearly costs)	189,600.00
5	travel (yearly costs)	11,200.00
	Sub-totals (US\$)	347,700.00

Initial Investments

6	Construction	131,000.00
7	Equipment	70,500.00
	Sub-totals (US\$)	201,500.00

Grand Total (US\$)

549,200.00