



Foster research and responsible tourism in a Paraguayan biodiversity hotspot

Karina ATKINSON

BORN

30 September 1985

NATIONALITY

United Kingdom

PROFESSION/JOB

Biologist, executive director, Para La Tierra

PROJECT LOCATION

Paraguay

PROJECT SUMMARY

Karina Atkinson, a highly resourceful Scottish scientist, has an ambitious goal: to promote Paraguay internationally as a destination for sustainable tourism by protecting and developing – through scientific research and community outreach – a natural reserve in the centre of the country.

Landlocked Paraguay, with a population of more than 6 million, is one of the poorest nations in South America. A boom in farming has boosted the economy, but intensive cattle ranching and soya and eucalyptus cropping have encroached on the natural environment.

Through Para La Tierra, a not-for-profit she co-founded in April 2010, Atkinson is establishing a model of environmental research and education, linked with support to communities living around a 804-hectare reserve, the Reserva Natural Laguna Blanca, in central Paraguay.

The reserve, which is owned by the Duarte family with whom Atkinson has a good working relationship, lies at the confluence of three major eco-regions: the Upper Paraná Atlantic Forest, the Cerrado and the Bosque Central of Paraguay. It has an artesian lake and harbours a wide diversity of plants and wildlife, including a number of endangered species; over 300 species of birds have been recorded to date, including 12 globally endangered and four near-threatened species. BirdLife International has designated the reserve an 'Important Bird Area'. Since May 2010, Para La Tierra, which has a research station and museum at the reserve, has discovered nearly 50 species of fauna that are new to Paraguay.

Atkinson's project has two main elements. The first focus is on conservation, scientific research, education and security. Thanks to three full-time, two part-time staff and volunteers, Para La Tierra is proving sustainable. The long-term aim is to provide a scientific basis for the conservation of species and habitats at the reserve and to be a source of information for scientists.

Atkinson is training park guards, recruited from the local community, who will also provide outreach and education. Most of the thousands of people living near the reserve are poor and have spent just six years or less at school. Since the reserve's establishment in February 2010, the local population are no longer able to hunt on the land. To compensate, Para La Tierra will build three poultry houses, in villages near the reserve, and stock them with chickens, giving the people a source of food for consumption and sale. However, the main strategy for engagement with the local community is via education. Workshops and environmental activities have been set up to inform locals about the value of the reserve.

Atkinson has linked a primary school near Glasgow with a primary school near the reserve, allowing students to share knowledge of their local habitats. She has also organized day internships for students at a local high school to learn about life at an ecological station.

Atkinson's second focus is ecotourism. Tourists already visit the reserve, but Atkinson wants to draw up to 130 people at a time, principally ecotourists and scientists. The reserve has already hosted more than 150 volunteers, interns and scientists from around the world; 29 projects have been carried out and 10 articles published in scientific journals.

PROFILE

After growing up in Glasgow, biologist Karina Atkinson discovered Paraguay in 2008. Her love for this nation has changed her life. She lives there, has published a book that is sold on the Internet about her experiences, and is learning the national indigenous language, Guaraní. Atkinson is bringing her training (a BSc from the University of Glasgow) and work in laboratories in Edinburgh and Boston to bear on her position as executive director of Para La Tierra, an NGO dedicated to the conservation of Reserva Natural Laguna Blanca.

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Revive traditional storytelling to craft a new narrative for Afghanistan

Selene BIFFI

BORN

13 August 1982

NATIONALITY

Italy

PROFESSION/JOB

Founder of Plain Ink

PROJECT LOCATION

Afghanistan

PROJECT SUMMARY

Selene Biffi is an Italian social entrepreneur who focuses her work on youth empowerment and education. She aims to establish a school for storytellers in Afghanistan that will preserve traditional Afghan folktales and oral heritage by creating a venue for ageing master storytellers to teach their craft and verbal artistry to younger generations. The skills and practical knowledge acquired will help students uphold the traditional body of tales and learn to create new narratives that carry important developmental messages to impoverished communities.

Many aid workers would be reluctant to return to Afghanistan having been evacuated following an attack in 2009, in which several colleagues were killed. Within only three weeks after this experience, however, Selene Biffi was back at work in Kabul. Her role was to create a textbook for children and young adults as part of a UN programme. But the work was challenging: since only three in 10 people can read and write, international aid programmes struggle with developing appropriate formats for information.

As a solution Biffi started to produce comics and then became aware that perhaps the most potent form of communication in Afghanistan had to be found in the ancient art of storytelling. In Afghan culture, storytelling is the traditional way to impart values, beliefs and information. However, the practice has been waning for many years for a multitude of reasons including the ageing of master storytellers and disruption caused by the war.

Biffi seeks to establish a school in Kabul where young, unemployed Afghans will be trained by master storytellers. The school will provide youth with the skills to create powerful oral stories, skills which can be employed by NGOs to transmit contextually relevant and culturally

appropriate messages about peace and development across Afghanistan. In this way, Afghan communities will be able to access information on critical issues such as health, food security or natural-disaster preparedness, in a familiar manner.

In the first-year pilot, 20 young people aged 18 to 25 will take part in a three-month workshop learning subjects such as community development, English, arts and, of course, storytelling, all taught in Dari, one of Afghanistan's official languages. The students, both male and female from any ethnic group, will learn traditional verbal artistry and memory techniques from master storytellers and other professionals, improving their knowledge of storytelling, creative writing and public performing. Upon successful completion of the courses, they will be linked up to local NGOs and institutions for internships.

The Rolex Award will enable Biffi to cover operating costs for the first year and set up a website to describe the school's mission while also encouraging Afghans all over the world to share traditional stories online. To secure the financial sustainability of the project, the school plans to offer services to NGOs and other agencies operating in Kabul. Ultimately, she plans to establish similar schools in other Afghan cities, with the aim of employing 10–20 master storytellers, who will train around 100 students per year.

PROFILE

Early in life, Selene Biffi developed a social conscience and passion for community development. When she was a teenager her parents helped to build a primary school for marginalized children in India. With only 150 euros, aged 22, Biffi launched an Internet-based NGO, Youth Action for Change, which provides young people in 130 countries with access to education. In 2009, she was selected as a Young Global Leader by the World Economic Forum. Biffi has a BS in international economics and management from the Università Bocconi and a NOHA Master's in Humanitarian Action from University College Dublin. She has a diploma on public policy and leadership from Harvard University and one on social entrepreneurship from INSEAD, among others. Biffi is now concentrating on her role as executive director of Plain Ink, which she founded in 2010 with her personal savings. She uses books, comics and storytelling to support communities around the world to build sustainable livelihoods.

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Develop a Braille smartphone for India's blind people

Sumit DAGAR

BORN

19 October 1983

NATIONALITY

India

PROFESSION/JOB

Interaction designer

PROJECT LOCATION

India

PROJECT SUMMARY

Sumit Dagar is an Indian interaction designer with an interest in designing user-centric technology for minority user groups. With millions of blind people in India, Dagar wants to develop a prototype of a Braille phone with a tangible-touch responsive display panel that will give blind people a multitude of functionalities and improve greatly their daily lives.

While pursuing engineering studies in information and communication technology, a summer internship in a remote Gujarat rural village sparked Sumit Dagar's interest in how disadvantaged communities might be helped by technology. Now qualified as an interaction designer, Dagar is devoting himself to designing technology that will allow marginalized people to benefit from advances in communications.

According to the latest World Health Organization estimates, 285 million people worldwide are blind or visually impaired, 22 per cent of whom are in India. Dagar wants to help India's millions of blind people by producing a prototype Braille mobile phone, which he hopes to develop into a smartphone. He began to work on the concept for his innovative device, which integrates an interactive touch-sensitive Braille display panel, alongside his studies for his Master's degree at the National Institute of Design.

The principle behind Dagar's phone is simple. The display panel surface is laid out with a grid of tiny bumps whose height can be varied independent of each other. Changes to the height of the components allow the grid to display touch-discernible shapes, figures, maps and simple Braille text. Functionalities planned for the Braille smartphone include the ability for users to: capture images as height maps that can be compared against a saved database of objects and people to allow identification; use global positioning system (GPS) technology with height-variable maps to allow independent travel; and convert text photographed with the device's camera into Braille.

Technology that converts English text output on a mobile phone screen into speech has been available for a decade. However, speech recognition in an English voice is not helpful for the millions of people who do not understand the language well and there are safety concerns as audio signals can mask important environment sounds. A Braille phone can offer richer information sets like graphics, diagrams and spatial orientation, which can be represented in a simpler way using touch interaction, giving a more satisfying user experience.

Dagar is collaborating with the L V Prasad Eye Institute in Hyderabad, a WHO Collaborating Centre for the Prevention of Blindness. Patients have been involved in the primary user research and validation and the institute has pledged its support for prototype development and testing. The Indian Institute of Technology in Delhi is providing the technology for the phone's Braille display and a colleague in the Indian city of Rajkot is leading on the electronic materials.

So far, Dagar has self-funded his work. The Rolex Award will allow him to cover start-up costs for his company Kriyate Designs, and operating costs for the first year. Dagar hopes to have a basic version of Braille Phone market-ready in late next year and the Braille smartphone within the next five years. Although the cost of the device is currently difficult to estimate, Dagar plans to make the Braille smartphone affordable to rural India's millions of blind people.

PROFILE

Dagar has a desire to exploit the opportunities offered by technology to improve the lives of impoverished people and enable them to participate more fully in society. He holds a post-graduate diploma in information and interface design (2010) from the National Institute of Design, and a Bachelor of technology (2008) from the Dhirubhai Ambani Institute of Information and Communication Technology. He received the Pride of National Institute of Design award in 2009 and, in 2010, presented his work at Space-X, an exchange forum on information design for blind people, and at the India Human Computer Interaction Conference. He was selected as a TED Fellow to present his Braille smartphone at the TED2011 Conference in the United States.

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Restore urban lakes in Chennai, India

Arun KRISHNAMURTHY

BORN

30 December 1986

NATIONALITY

India

PROFESSION/JOB

Environmentalist

PROJECT LOCATION

India

PROJECT SUMMARY

Arun Krishnamurthy is a committed young Indian environmentalist who combines his passions for nature, education and youth through his non-profit organization, the Environmentalist Foundation of India (EFI). Rapid and uncontrolled urbanization in several of India's major cities is leading to encroachment on many urban water bodies, resulting in the partial or complete loss of biodiversity. Krishnamurthy proposes to tackle this pressing issue with the sustainable, community-based restoration of Lake Kilkattalai in Chennai.

Krishnamurthy has built up an impressive portfolio of work in the environmental sector after quitting a promising career at Google to focus on his passion for developing community participation projects in conservation and environmental education.

Through EFI, Krishnamurthy has recruited 900 volunteers through school programmes and street theatre for conservation projects. Most of the volunteers are students aged under 20 years who receive conservation training from Krishnamurthy covering practical environment work, effective communication and how to chart a career as an environmentalist. Krishnamurthy partly finances EFI and its seven part-time staff through Krish Info Media, a communications company he founded after leaving Google.

Krishnamurthy has already cleaned up lakes in New Delhi and Hyderabad. Chennai, the capital of Tamil Nadu state, was once known for its lakes and gardens but uncontrolled urbanization has degraded many of them. Depletion of the lakes has also affected the city's ability to replenish scarce water supplies via the annual monsoon and urban habitats for the region's wetland wildlife are literally drying up. The use of urban lakes for dumping of garbage and effluent has also made them a health hazard.

The Rolex Award will fund a programme to breathe new life into Lake Kilkattalai, a 1.5 km² stretch of polluted water in a newly built-up area of Chennai that is home to 500,000 people. Four stages are planned: mapping of the natural habitat and pollutants; mass garbage clearance; desilting the lake and strengthening the periphery; and reintroduction of native wildlife. As a communications professional, Krishnamurthy is adept at the awareness-raising activities necessary to harness the enthusiasm of student volunteers to participate in the programme. It is hoped that local people will join the students in cleaning up the lake, planting trees and monitoring water quality, at the same time developing a strong sense of community ownership.

Krishnamurthy hopes that Lake Kilkattalai will become an oasis in Chennai, with its reintroduced endemic aquatic species, and newly planted native trees, such as neem, banyan and mango. The project will serve as a prototype for a range of further projects to restore urban wetland in Chennai and beyond.

PROFILE

Krishnamurthy is passionate about environmental education. A graduate of Madras Christian College, he completed a post-graduate diploma at the Indian Institute of Mass Communication. He ran Roots & Shoots India, under the Roots & Shoots network, in 2008 and, in 2011, founded his NGO, Environmentalist Foundation of India. He has produced and directed two environmental documentaries, which have been screened nationally and internationally. *Elixir Poisoned* (2011) highlights the need to protect the aqueous environment and *Kurma* (2010), for which he received an award, describes the plight of sea turtles. Among his other commendations is a Google Alumni Impact Award in 2011. Recently he was chosen as a Youth Action Net Fellow by the International Youth Foundation.

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Build a park for environmental education in the Yucatán

Maritza MORALES CASANOVA

BORN

29 June 1984

NATIONALITY

Mexico

PROFESSION/JOB

Environmentalist

PROJECT LOCATION

Yucatán Peninsula, Mexico

PROJECT SUMMARY

A young, highly resourceful environmentalist, Maritza Morales Casanova from the state of Yucatán is determined to raise awareness among young people – in particular underprivileged children – on environmental issues, especially water resources and sustainability. To significantly scale up her grassroots action, she is building a major park dedicated to the environment, which is intended to provide educational activities to 64,000 children each year.

The Yucatán Peninsula, in south-eastern Mexico, faces serious problems, as it is geologically composed of permeable limestone (karst). As rainwater sinks quickly into the rock, water gathers in underground wells with the result that the northern half of the peninsula has no rivers or lakes. With such fragile aquifers, pollution, sewage and waste water mismanagement pose major environmental and health issues. The region, with 2 million inhabitants, is also a popular tourist destination, which adds to the environmental pressure. It is largely inhabited by Maya-speaking indigenous communities living in extreme poverty, who have little or no awareness of the need for environmental sustainability.

Across the Yucatán, few schools consistently provide information to students on conservation, despite challenges for the nation's environment: freshwater consumption is high, there are no sustainable methods of waste disposal and fragile wetlands are being destroyed.

Morales Casanova believes that radical action is needed – and quickly – to educate the next generation and help Mexicans develop healthy patterns in their government policies and their lives in order to protect the environment. The principal aim of her project is to provide high-level environmental education to 50 per cent of students (five to 22 years old) in the Yucatán – approximately 286,000 students during the next five years.

To achieve this, she is building a 7,600 m² park where local children and their families can learn about environmental issues in an entertaining way, using games designed for children and teenagers. The park, named “Ceiba Pentandra” after a Mayan sacred tree, will be located in Mérida, the capital of Yucatán, which has a population of about 1 million. It will comprise five areas devoted to educational activities, an environmental library and laboratory for 25 teachers and students, a dormitory to host youth from coastal communities who come to the city’s schools and university, an auditorium, museum, open-air theatre, and an aquaculture training area.

Morales Casanova plans to have youngsters, trained through her non-profit organization HUNAB (Humanidad Unida a la Naturaleza en Armonía por el Bienestar, la Bondad y la Belleza), conduct four-hour, daily educational visits for schools and the public. Four times a year, aquaculture workshops will also train 25 families in breeding local freshwater snails for sale.

With a solid track record of persuading government leaders and others of the value of her vision, the Young Laureate’s plans are coming to fruition. The foundation stone for Ceiba Pentandra was laid on 13 May 2012 on land (worth US\$211,000) donated by the municipality of Mérida. The Yucatán state government financed the architectural blueprints. The administrative office for the park, along with two education areas and a parking lot, are expected to be ready before the end of 2012, at which point Ceiba Pentandra will be partially opened. Thanks to her Rolex funds, construction has also begun on five interactive classrooms, in which visitors will learn about global warming and climate change; wetland conservation; protection of wildlife (environmental laws, illegal wildlife trade, etc.); recycling of waste; and development of handicrafts using natural materials.

PROFILE

Maritza Morales Casanova demonstrated in 1995 that she was going to be a major catalyst for change when she launched HUNAB, an NGO for environmental education. She was 10 years old. Three years later, she won Mexico’s national Youth Prize for her proposal to build a specialized area where children and youth could be trained on environmental issues. Morales Casanova has won a string of national and international prizes in the past 10 years. She has also gained a Bachelor of Science degree in mathematics and undertaken specialized training in social planning, conservation strategy, leadership and freshwater aquaculture – all to aid her environmental work. A focus of her project is the involvement of young people, as she believes everyone is capable of bringing about change. HUNAB, under her leadership, is now operated by 30 children and teenagers, 80 per cent of them female.

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Jury Members

2012 Rolex Awards for Enterprise

Habiba Bouhamed Chaabouni (Tunisia) has carried out pioneering research on genetic disorders. A medical doctor, she is a professor of medical genetics and director of the Laboratory of Human Genetics Research at the Faculty of Medicine of Tunis and head of the Congenital and Hereditary Diseases department at Tunis Charles Nicolle Hospital.

Gururaj “Desh” Deshpande (India/United States) is founder and chairman of several innovative technology companies, among them Sycamore Networks. Currently co-chairman of the U.S. National Advisory Council on Innovation and Entrepreneurship, the Indian-born global philanthropist started the Deshpande Center for Technological Innovation at MIT, where he is a member of the board.

Sylvia Earle (United States), one of the world’s most eminent oceanographers and deep-ocean explorers, has logged nearly 7,000 hours underwater and led more than 100 expeditions, many of them record-breaking, over more than four decades. Today, she is an explorer-in-residence at the National Geographic Society, a lecturer and author of such books as *The World is Blue*.

Steve Jones (United Kingdom) is a distinguished biologist and prize-winning author recognized worldwide for his contributions to the public’s understanding of science. A professor emeritus at University College London, he previously headed the Department of Genetics, Evolution and Environment, focusing his research on subjects from the genetics of snails to human evolution.

Calestous Juma (Kenya), an authority on sustainable development, is professor of the Practice of International Development at Harvard where he directs the Science, Technology and Globalization Project, as well as the Gates Foundation-funded Agricultural Innovation in Africa Project. Juma recently published *The New Harvest: Agricultural Innovation in Africa*.

Tayeb A. Kamali (U.A.E.) is vice chancellor of the Higher Colleges of Technology (HCT) – the U.A.E.’s largest institution of higher learning. He has spearheaded education, training, research and applied technology programmes, including entrepreneurship and e-learning initiatives in the Middle East for more than two decades.

Amyr Klink (Brazil) has set world records with his maritime exploits. These feats, featured in his many books, are the first single-handed crossing of the South Atlantic Ocean, the first solo wintering in the Antarctic, and the first non-stop, solo circumnavigation of Antarctica. Klink is today a polar consultant and motivational speaker.

Antonio Machado-Allison (Venezuela) is a global expert on animal biosystematics and an acknowledged authority on freshwater fish, in particular the piranha. The renowned zoologist, recipient of Venezuela's Order of José Maria Vargas, is currently editor of the *Bulletin of the Venezuelan Academy of Sciences*.

Keiko Nakamura (Japan), a pioneering life scientist, is celebrated for her groundbreaking ideas concerning the relationship between the biological sciences and society – a field she coined as biohistory, which helps interpret “the grand story of life”. She is the author of several books, including *From the Window of Biohistory*.

Subramaniam Ramadorai (India), acknowledged for putting Indian IT on the map, is well known for establishing Asia's biggest software and services company, Tata Consultancy Services, of which he is now vice chairman. Recipient of India's Padma Bhushan honour, he was recently appointed to the Indian prime minister's National Council on Skill Development, with the rank of cabinet minister.

Gerhard Schmitt (Switzerland), an expert on artificial intelligence and computer-aided architectural design, is a professor of information architecture and senior vice president for international institutional affairs at the Swiss Federal Institute of Technology Zurich (ETH). Recipient of the European Cultural Award for Science, he currently heads the Singapore-ETH Centre for Global Environmental Sustainability.

Mahrukh Tarapor (India/United States), one of the most widely respected international museum professionals, served for many years in senior positions at New York's Metropolitan Museum of Art, organizing exhibitions worldwide. The Indian-born, American scholar is now a consultant working for major cultural institutions and a museum advisor to the Indian government.



Fact Sheet

Programme Overview

The Rolex Awards for Enterprise were created to foster a spirit of enterprise and advance human knowledge and well-being. They support pioneering work in five areas:

- science and health
- applied technology
- exploration and discovery
- the environment
- cultural heritage

Winners are innovators who typically work outside the mainstream and often have limited access to traditional funding. Rather than reward past achievements, the Rolex Awards provide financial assistance and recognition to individuals embarking on new ventures or carrying out ongoing projects.

Grants of 100,000 Swiss francs are awarded to Laureates and 50,000 Swiss francs to Young Laureates. All winners also receive a Rolex chronometer. The grants must be used to complete projects.

A cycle of awards devoted to Young Laureates was introduced in 2009 to encourage the next generation of leaders.

Selection Process

Winners are chosen by a Jury of international experts who themselves embody the spirit of enterprise that the Awards seek to promote. The Jury is international, interdisciplinary and independent. A new panel is convened for each series of Awards, which are presented every two years.

Rolex receives as many as 3,000 applications from more than 150 countries for each series. The Awards are open to individuals of any nationality or background. The applications are analysed by a team of scientific researchers before being presented to the Jury.

Projects are judged on their feasibility, originality, potential for sustained impact and, above all, on the candidates' spirit of enterprise. Applicants must show how they will use a Rolex Award to leverage the impact of their projects, and how, through initiative and ingenuity, they will benefit mankind.

History of the Rolex Awards

The Rolex Awards for Enterprise were established in 1976 by the late André J. Heiniger, former chairman of Rolex, to commemorate the 50th anniversary of the Oyster chronometer, the world's first waterproof watch.

In the 36 years since the Awards for Enterprise were founded, Rolex has been inspired by the work of a global network of visionaries. Winning projects range from technological and scientific inventions to protecting rare and endangered species – from the tiny seahorse to the giant whale shark – and habitats, from the Amazon rainforest to forest ecosystems in Sri Lanka. They also focus on reviving time-honoured practices, from agriculture in the Andes and Africa, to traditional healing in the Himalayas, along with providing safe, affordable water, energy, shelter, food and medicine in developing countries.

Rolex Philanthropy

Since it was founded a century ago, Rolex has championed individual excellence and achievement. In the 1950s, the company began assuring the reliability of its watches by asking leaders in sports and exploration to test them under extreme conditions – from the summit of Mount Everest to 10,000 metres underwater.

During the past three decades, the company has continued to recognize excellence through two unique philanthropic programmes: from 1976, the Rolex Awards for Enterprise, and, from 2002, the Rolex Mentor and Protégé Arts Initiative.

The Arts Initiative is a global programme that pairs emerging artists with masters in architecture, dance, film, literature, music, theatre and the visual arts for a year of intensive collaboration. The aim is to help ensure that artistic excellence is passed on to the next generation.

By fostering innovation in science, exploration, conservation and the arts, both the Rolex Awards and the Rolex Arts Initiative advance the work of individuals who exemplify the vision, ingenuity and excellence that define the Rolex brand.