

Interview with Dr. Prativa Pandey, CEO of Herveda Botanicals

When she returned to Nepal from the United States after a devastating earthquake, Dr. Prativa Pandey, a young scientist and an inventor already had a decade of research experience, three US patents to her name and was determined to make an impact in her country. She started exploring ways to use and enhance the natural richness and diversity of her country respectfully and responsibly. A few years later, she is both a researcher and an entrepreneur. She was awarded the highly reputed OWSD-UNESCO Early Career



Fellowship through which she is creating green technologies to extract highly valuable bio-active compounds from waste citrus fruits peels that can be used as a key ingredient in pharmaceutical, nutraceuticals, and cosmeceuticals industries. She also leads a technology company, and its skincare company spin-off seeking to highlight the richness of the Nepalese culture and diversity in a combination of science, people, and plants.

WIPO: Can you introduce yourself, your professional and personal path? What was your dream job when you were a child?

Prativa Pandey (PP): I am a researcher as well as a science entrepreneur. My research in Nepal is on value addition of medicinal and aromatic plants (MAPs) of Nepal. I did my Bachelor's in Chemistry and Mathematics from Salem College, followed by a Ph.D. in Chemistry and Certification in Management in 2013 from Northwestern University, in the USA. My Ph.D. research was focused on material science, organic chemistry, and nanotechnology at Northwestern University. I then worked as a full-time research scientist in the semiconductor sector in the U.S. before returning to Nepal in 2015, after the devastating earthquake that affected the country immensely. I now identify as both a researcher and an entrepreneur.

My dream job as a child was to become an engineer or a scientist. I realized in class 3 or 4 that I was really good at mathematics and science, and I started tinkering with things. I actively participated in projects, exhibitions, Olympiads and extracurriculars to explore my curiosity in science and mathematics.

WIPO: Herveda Botanicals is an innovation spin-off of Catalyst Technology. Can you explain what is Catalyst Technology?

PP: When I came back to Nepal, I was still working for the same company, Cabot Microelectronics Corporation, in the U.S. and I was leading a team of scientists and researchers in Singapore, from Nepal, in the semiconductor and hard disk industries. I was going back and forth between Singapore and Nepal two times a month. This was a half-time position because I wanted to explore Nepal to find ways to have an impact through scientific interventions in Nepal. I thought it was better to conduct research and innovation contextually, rather than importing solutions that were more suited to other parts of the world.

I traveled to various districts in Nepal and started consulting for the government and private sector. I realized that there was a huge value chain gap, in particular in MAPs, and that the entrepreneurial and scientific eco-systems were very weak, both in terms of infrastructure and innovation mindset.

After almost two years of working remotely for Cabot Microelectronics, I decided to quit my job to create Catalyst Technology, with a goal to find solutions to market problems through technological interventions. I worked for the government in Nepal and private sectors globally as scientific, policy and management consultant. I produced reports and recommendations over the following two years through Catalyst Technology, but realized no one was taking on those recommendations. The government was not able to establish a long-term project and move it forward and the private sector was mostly interested in trading or packaging rather than innovation because innovation has seemingly high cost and low reward in short term in fragile ecosystems like Nepal. I wanted to create an example of how innovation can be imprinted in the cultural DNA of an organization and a brand. I saw huge prospects to add value to MAPs initially in the form of high quality and all natural skincare products and spin-off a company after 3-4 years of research in the field and in lab. The gaps spanned from unfair distribution of profit where farmers were getting pennies while traders pocketed huge profits to unsustainable harvesting of MAPs. There also was a wealth of traditional knowledge to be explored. I interviewed a lot of traditional and ayurvedic medicinal practitioners, as well as Aamchi's (traditional healers in the mountainous/ Tibet-bordering region of Nepal). After 3-4 years of research on the field and on the formulation of all-natural skincare products, working on issues such as aesthetics, functions, stability, shelf life and preservation, I created Herveda Botanicals.

WIPO: What is the product range of Herveda Botanicals?

PP: We started with three products: a facial scrub called "Kon", used by Newars, an indigenous group in Nepal who were the historical inhabitants of Kathmandu Valley and surrounding areas in Nepal. I interviewed Newars from different areas, modified the traditional recipe with an influence from another traditional scrub called "Bukuwa" used in Brahmin and Chettri community. Additional value addition included incorporation of enzymes, natural cleansers, and herbs coming from Ayurvedic references and latest skincare innovations. I wanted to create this formulation to show that Kathmandu valley has evolved as a place where there is a mix of cultures and people and I wanted to tell such stories of plants, people and science through my products.

We also launched a mist/ toner, with medicinal plants. It was called the "Marigold mist" because marigold is one of the most important plants that is used in various cultural events and worshipping ceremonies in Nepal, and I wanted to talk about that too.

The third one was a vitamin C serum, which has some western influence, but we added medicinal plants in it. It is very hard to stabilize pure vitamin C, but because I have a background in chemistry, I came up with the idea of synergizing with medicinal plants and some natural chemicals to make it much more stable than what you can get on the market.

We now have a day cream, a night cream, and a newly launched facial oil. We will soon have a facial mask and other products, with the same idea of ayurvedic, Tibetan, and indigenous influence, and implementing latest innovations in skincare, while doing it ethically, sustainably and responsibly.

WIPO: How do Indigenous Peoples benefit from Herveda Botanicals?

PP: We buy directly from indigenous people and give them the market price, without the cut normally taken by three or four intermediaries, which is a huge compensation for them. We also introduce them and their stories through our products. We collaborate with a company called Aji's, which brings the handmade creations of older people. We buy traditional Kon prepared by a 60-year-old Newar maker of Aji's, as a raw material, add value to make it more aesthetically and functionally advanced and bring it to the market. Aji's maker also get fair share from the profit by collaborating with us. Similarly, we collaborate with many such companies by directly and indirectly employing numbers of home-based women workers to create soaps, traditional lokta boxes, candles, etc.

WIPO: What makes Herveda Botanicals products different from other products on the market?

PP: When I started looking into skincare products being sold in Nepal, I realized they were mainly imported products. There were two types of imports. There were big brands and "Nepal made" brands where companies would import the base or even the product itself, and rebrand them with their company's name. None of those companies sourced their raw materials from Nepal. In skincare, up to 70-80 percent of the product could be water. Instead of paying import tax on finished goods that largely contains water and harmful chemicals, and adding to the country's trade deficit, we could prepare much higher quality skincare products in Nepal using higher quality and locally sourced raw materials, employing hundreds of Nepalis, and make the products available at a competitive price range in Nepal and globally. The biggest share of Nepal's imports is from personal care products. I cannot reduce the trade deficit alone, but Herveda Botanicals gives a glimpse of how systems approach, value addition and innovative approaches (if scaled) can be employed to create high-value exportable products to reduce the trade deficit in the country.

I see Herveda Botanicals as an example of how skincare can be made locally in a responsible way. Our products are made more than 99 percent natural products and naturally-derived chemicals. All plant-based raw materials come from Nepal and we work directly with the farmers, which is another thing that most companies do not do as they mainly work with traders. We understand what is the value of raw material and transfer that value to the farmers and indigenous communities.

Another important difference is technological intervention and scientific testing in terms of safety, bacterial and heavy metal control, and shelf life. Unfortunately, there is no cosmetic regulation in Nepal. It is a competitive advantage for us to be compliant with international cosmetic regulations, but it is also a responsibility as we are trying to push for cosmetic regulation and consumer awareness in the country.

WIPO: How large is the company now, and what is its production capacity?

PP: The company now has ten full-time staff, but employs many more people directly and indirectly through collaborations with farmer communities and other smallholder businesses. We are in the process of hiring an in-house graphic designer, a marketing specialist, and an accountant, as we plan to scale up this year.

In the last year, we have increased our production capacity seven folds, going from 10 to 20 kilograms for each batch of product to up to 70 kilograms per batch. We were able to grow

gradually and organically as a company in spite of the COVID-19 pandemic. We also took the e-commerce route after the physical limitation posed by the pandemic, which helped us to reach more customers all over Nepal.

WIPO: Can you explain the science/research behind your products?

PP: There are two strands of research. Firstly, research on indigenous knowledge and plants and the social-anthropological side of it, and secondly, the science that comes with product formulation, looking for properties such as antioxidant or antibacterial. I conduct research at Herveda Botanicals and the Research Institute for Bioscience and Biotechnology (non-profit research institute), where I am a scientific adviser. We also sent our products for third party laboratory testing and verification before launching to the market. Additionally, I also study a lot of scientific literature on medicinal plants and read ancient Ayurvedic books for value addition and contextualization.

WIPO: Where are Herveda Botanicals marketed? Are they only available in Nepal?

PP: Herveda Botanicals products are currently sold only in Nepal at online stores and at our showroom in Lalitpur.

WIPO: What is in the future for Herveda Botanicals?

PP: Herveda Botanicals' main aim is not just selling skincare products, but sharing an experience and the richness of our culture and our diversity through various products/ solutions. We see it as a combination of science, people, and plants. We want to work at systems level to strengthen entrepreneurial and innovation ecosystem and Herveda Botanicals is one of the media to do that.

For the future, we are looking into herbal supplements. We are also exploring the possibility for Catalyst Technology to become a certifying and standardizing organization so we can support many other skin formulators, herbal supplements, or food manufacturers so their products are fitter for exportation.

We are U.S. Food and Drug Administration-compliant for cosmetics, and are planning to export our products to the U.S. Our ultimate goal is to distribute our products in Asia and Europe, as Europe is a huge potential market for natural cosmetics. The EU cosmetic regulation is however, the strictest as cosmetics are treated in the same way as medicines. We are building all the bases to get past such strict regulations as well.

WIPO: How would you describe the importance of intellectual property protection for Herveda Botanicals?

PP: Intellectual Property is very important. For the moment, Herveda Botanicals only has trademark protection, both in the U.S. and in Nepal. All our formulations and processes that are part of our intellectual property remain treated as trade secrets and are owned by Catalyst Technology. I am also an executive Board member of the Intellectual Property Protection Society Nepal (IPPSON) where we bring awareness about intellectual property, support policy formulation, conduct technical workshops, and I have also trained the government officials about patents through IPPSON. We are pushing for the adoption of an amendment to various IP laws and provisions in Nepal including IP rights related to collective marks, traditional

knowledge and geographical indications, such that indigenous and local communities' have their knowledge protected and can reap benefits from them.

I completed some certificate programs from WIPO, and I own three patents myself in the U.S. on semi-conductor products.

In Nepal, intellectual property protection is very weak and I decided not to patent my products for now because that would mean disclosing everything. I am still thinking about how best to protect the intellectual property of my company. Catalyst still owns IP related to all the products and the mixtures are coded. This is how I am safeguarding formulations and processes until we have a more trustworthy mechanism for IP protection.