National

Projects Nurturing at National Innovation Center and its status

S.N	Name of Project	Project Information	Project Status
1	Animal Repellent System	To repel the monkeys and animals causing damage to agricultural fields.	80% of work has been finished, Filed test is in process
2	Baby Warmer and incubator	A biomedical device built completely in Nepal that provides warmth to neonatal infants post-delivery.	98% of work has been finished, hospital is using the device, Eighteen Units of warmer is serving around Nepal from East to west. Available for order.
3	Medical Delivery Drone	To supply medicines and critical items in remote areas of Nepal	70% has been finished, need to improve on hardware and multiple test need to run
4	Sabji Kothi	Low cost, decentralized, portable storage for extending the shelf-life of horticultural products. It is a non-cooling, non-chemical solution which is bound to increase the income of marginal farers and trader's up to 30%	Project on hold.
5	Black soldier fly	Developing alternative animal protein resources for poultry by using black soldier fly larvae.	100% of work has been finished and is available commercially.
6	Sel roti making machine	For mass production of Sel Roti (a Nepalese traditional rice bread) automatically.	Project on hold.
7	Ok Journey	Online bus ticketing platform and bus route information system.	Project is under commercial stage and running business smoothly
8	Ginger Drink	A healthy carbonated drink made of Ginger.	Flavor has been prepared and carbonation is being tested.
9	Looma	Looma, an affordable and low power-consuming audio-visual education computer. Looma can provide an interactive window to educational content for any school even without an Internet connection.	Working in collaboration with VTS (Village Tech Solution) for assembly, deployment and updates.
10	Electric conversion	To convert old diesel engine of age above 20 years in to electrical vehicles.	Project on hold.

11	Riverse Vending Machine	A device that accepts used (empty) beverage containers and return money to the user. Used for recycle of plastic products	Project on hold.
12	Solar Water Heater	A system where solar energy is used to heat the water with higher level of efficiency than traditional solar heaters.	Completed the prototype and innovator had taken his project with him for further development and Commercial propose
13	Electronic Health Recording System	An electronic health record is the systematized collection of patient and population electronically stored health information in digital format. EHR systems are designed to store data accurately and to capture the state of a patient across time. The clinical Journey of the patient is captured during service delivery at any health care facility	A team is formed for the development of software and in a stage of implementing the software in Nepali hospital
14	Agarbatti making machine	A machine which can be used to make aagarbatti for larger scale, first time in Nepal, a prototype is ready and ready to go in market.	Project on hold
15	Prawn Farming	A modern way of prawn farming, prawn fish is not so common in Nepal but it has high value in market	Project on Hold
16	Paw farming	A modern way of paw farming, where its meat has higher mediational value	Farmer is growing paw with the help of NIC
17	Thermal power/Distil water	To produce electricity by giving low input	On process of testing
18	Everestkart.com	E-commerce platform	Project completed
19	CNC Darji machine	A machine which can be used to cut the clothes in precise way	Project fail
20	Smart Water Tank	A device which is used to identify the level of water in the water tank	Prototype tested. Project on hold.
21	Gundruk making machine	A system which produces large amount of Gundruk(a fermented leafy green vegetable).	Fermentation tank has been developed and further process is going on in collaboration with RECAST team
22	Mina Robot	An autonomous service robot being developed at NIC.	Prototype is being developed.
23	Climate control machine of mushroom/Any Room	This machine automatically controls the climate of mushrooms that need to grow. At current situation, the main problem is difficulty to maintain the climate of mushrooms. In the winter season the temperature is very cold and in summer temperature is very high. Due to that mushroom farmer cannot produce mushrooms throughout the year. The main benefit of this system is that mushroom farmers can produce mushrooms in all seasons.	A system is developed and is in a testing phase.
24	SastoCube Educational Satellite	SastoCube is an Educational Satellite Kit that teaches basic, hands-on satellite design and Engineering to students from grades 6 to 12. The kit is based on a nanosatellite standard called	A team is working on making different modules of the cube.

		a CubeSat. CubeSat's have revolutionized the way satellites are taught at universities, democratized access to space enabling hundreds of satellite-based start-ups and has Fundamentally changed the way we design space systems. SastoCube Kit is inspired by SastoSat CanSat Program- a low-cost educational satellite program- which has been annually conducted since 2016 and has reached over 15 schools and universities training over 150 students from grade 7 and above. The designers of NepaliSat-1, the first satellite for Nepal, back SastoCube.	
25	Mechanical Power hammer	A mechanical hammer used for forging or hammering the metal to bring the metal in different shapes and sizes. This hammer can be used to make different types of agricultural tools, especially by blacksmiths. The hammer is designed for of small industries, which can be easily operated by electricity.	A prototype of hammer is made, and innovator is looking for the investment.
26	To fabricate automatic bike washing system	Automatic bike washing machines are being used by different workshops but this machine has to be imported from abroad which results in higher cost. For developing a cheaper version of it, the team is working on development of automatic washing system	Team is on process of making a prototype of system, where 90% of task has been completed
27	Production of high grade liquid fuel for DI-CI engine by Pyrolysis of waste plastics	Pyrolysis has become an attractive alternative because of the easy operation. In this work, waste plastic (HDPE,LDPE,PS,PP,PET) were converted into petroleum-based valuable fuels (gasoline, petrol or kerosene and light gases). The maximum temperature in a reactor in the absence of oxygen was kept at about 400°C. It was found that time required for completion of the Pyrolysis process was 3 hours. Results showed that the process gives about 60-65 wt% of liquid fuel. Here, the process of converting waste plastic into value-added fuels is explained as a viable solution for recycling of plastics. Converting waste plastics into fuel hold great promise for both the environmental and economic scenarios. The properties of the oil derived from waste plastics are analyzed and compared with the petroleum products and found that it has properties similar to that of diesel.	An experiment has been carried out by team under the supervision of professors and team is in the process of fabrication of standard system for better optimal results.
28	Electronic Billing System	Small restaurants have become an integral part of the daily life of every middleclass average Nepali. The trend is extremely apparent and on the rise in urban areas, where people much rather prefer to save time and money by visiting restaurants than cook at home. An average Nepali spends around 11 percent of his/her income in restaurants and there are over 2000 currently operational in the country. The product was developed targeting these small restaurants to optimize the businesses and increase workflow efficacy. The Electronic Billing System	A system is ready Due to Covid its testing on upper Himalayas reason is postponed

		functions on two fronts: A web application that accepts the orders and provides a cut-down order management interface and a java application that asynchronously prints out tokens reflecting orders and various changes. The system is hosted on Raspberry Pi, the web application can be accessed through any web browser and the tokens are printed out on a 58mm thermal printer unit mounted on the device. https://nicnepal.org/project/agriculture/electronic-billing-system	
29	Egg Incubator	The incubator is an apparatus that is used to regulate environmental conditions such as temperature, humidity and turning for successful hatching of the fertile eggs placed in an enclosure. It is often used for growing bacterial cultures, hatching eggs artificially, or providing suitable conditions for a chemical or biological reaction. The incubator is recorded being used to hatch bird and reptile eggs. In Nepal, thousands of poultry farmer has to depend on the imported egg incubator to hatch the eggs by spending huge amount of money. National Innovation Center is working to find the solution of eggs incubation by using a local technique, which we believe that we will reduce the cost and increase the efficiency of the egg incubation on days to come for Nepali farmer	1 units of capacity of 300 eggs has been developed and one round of test has been completed but the result was not that satisfaction so another round of testing is in process.
30	Coffee Roosting machine	Coffee is becoming famous in Nepal these days, the number of coffee farmers are also increasing with the increasing of coffee demand in the Nepali market. However, the farmers are not aware of the refinement of the coffee beans and they have been using a traditional technique for roasting them. Some of the business houses are using a modern method but the machines they brought from abroad is expensive. To address the problem of the technology, National Innovation Center is manufacturing a modern Coffee Roasting machine	Team is working on the fabrication of machine on demand of the customers
31	Power Tiller	Ploughing the field of hilly region of Nepal is difficult by using the modern tractor so a concept of the Power tiller is being tested at NIC,	Team had made 2 prototypes of such kind of machine and it is under testing phase.
32	Ramp Pump	The hydraulic ram pump – commonly referred to as a hydram – pumps water from its source to a community. It utilizes the natural power of falling or rapidly moving water, meaning the hydram requires zero external energy supply to operate. This process works on a principle called 'water hammer', where a large amount of quickly moving water is pushed through a small opening	A small scale prototype is made at NIC and the test result was satisfactory with reference of the test team is building large scale of Ramp Pump with

		to create pressure. As pressure builds within the system it reaches a critical point that then lifts a fraction of the water flow. This system can be effective on solving the problem of irrigation and drinking water where head of water resources in not that high.	higher capacity of water flow.
33	Bee Carrier	For a large scale bee farmer, it is difficult to provide flower to the bee throughout the year, so when the flower is not available then bee can be carried to the palace where there is flower for the bee	Team is working on making the frame structure of the bee carrier
34	Stretcher With Weighing Scale	The project has a goal to help clinicians from the burn department serve the victims of burns. The product will enable healthcare workers to measure the weight of a patient who cannot sit or stand. The weight obtained from the product will be used to accurately determine the factors required for the resuscitation of the patient	Team is working on making a prototype and it is in final stage of completion before going for medical test
35	Solar Dryer	Direct solar dryers expose the substance to be dehydrated to direct sunlight it help to dry the vegetable and the dry vegetable can be used on off-season	Team is fabricating the solar dryer and in process of becoming commercial products
36	Solar Maternity Bag	The project has the goal to serve the mothers-to-be in the rural setting. The product will enable healthcare workers primarily midwives to be able to set up a delivery room within the patient's own house or the primary healthcare center itself. It will have necessary lights and equipment required to monitor the maternal and fetal health.	Team is doing research and in process of procurement of the necessary materials for the system, Project kick off
37	Food lab	A team at NIC is exploring making different products from the food some of the project undertaken at NIC by the 1Food lab team are below Project Name 1.Drying(different fruits\veg and herbs/meant) Progress.. Research and finding are ongoing 2. Junar wine Production Research and finding on Going 3. Multigrain Composite RTE product Research ongoing 4. Turmeric-Toffee Work Research and production for testing 5.By-Product utilization	

		making of Jam, jelly, marmalade, candey, chips 6. Making of carbonate ginger drink	
38	Gamala Making Machine	The Purpose of the machine is to make the mud port of the flower mechanically so the production time will be less and larger no of port can be manufactured in short period of time	A prototype is made and team is optimizing the quality of the machine
39	NewArt	The Purpose of the project is to design, create, produce and marketing of the Nepalese traditional ritual objects, statuary, home and kitchen appliances, accessories, jewelries, interior and exterior decoration objects etc by using both traditional and modern smart tools. Which will help to preserve and promote our culture of art and craft and create an opportunity of job for Nepali young generation and help to achieve the financial prosperity.	Team is making different kind of art at NIC and looking for the customer for the products

Products developed by NIC to combat with COVID-19

S.N	Name of Product	No of product
1	PPE Gown	2500+ distributed all around Nepal
2	Corona Testing Booth	55+ Distributed most part of country
3	Aerosol Box	25+ Most of hospital with larger number of corona cases
4	Robot for isolation wards.	1 Provided to army hospital, chauni. 1 provided to Birgunj Hospital.
5	Manual Hand sensitize	4 unit distributed , 5 stock at NIC
6	Ventilator Repair	40+ mostly inside Kathmandu and Dharan
7	Kidney dialysis machine	7+
8	UVc disinfection system	20 pcs are under making
9	Automatic hand sanitizer device	1 unit
10	Corona swab collection kits	300 pcs developed and other are under production
11	PAPR	120+
12	Isolation Chamber	7 pcs
13	Isolation Hood	60+
14	Repair of Oxygen Concentrator	20+
15	Face shield	20000+

16	Body bag	50+
17	CiPAP	50+
18	Pneumask	150+
19	Mobile corona testing booth	1