

TC Document

I. Basic Information for TC

▪ Country/Region:	COLOMBIA
▪ TC Name:	Alternative Data Sources: An Imperative in the Times of COVID-19
▪ TC Number:	CO-T1644
▪ Team Leader/Members:	Mejia-Guerra, Jose Antonio (IFD/ICS) Team Leader; De Simone, Francesco (IFD/ICS); Manzur Madariaga, Michelle (IFD/ICS); Porrua Vigon, Miguel Angel (IFD/ICS); Shin, Sungyeol (IFD/ICS); Vila Saint-Etienne, Sara (LEG/SGO); Yee Amezaga, Karla Mirari (IFD/ICS) Sungyeol (IFD/ICS); Vila Saint-Etienne, Sara (LEG/SGO); Yee Amezaga, Karla Mirari (IFD/ICS)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	.
▪ Date of TC Abstract authorization:	03 Aug 2021.
▪ Beneficiary:	National Administrative Department of Statistics (DANE) of Colombia
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	Knowledge Partnership Korea Fund for Technology and Innovation(KPK)
▪ IDB Funding Requested:	US\$400,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	24 months (24 months)
▪ Required start date:	December, 2021
▪ Types of consultants:	Individual consultants and consulting firms
▪ Prepared by Unit:	IFD/ICS-Innovation in Citizen Services Division
▪ Unit of Disbursement Responsibility:	IFD/ICS-Innovation in Citizen Services Division
▪ TC included in Country Strategy (y/n):	Y
▪ TC included in CPD (y/n):	N
▪ Alignment to the Update to the Institutional Strategy 2010-2020:	Productivity and innovation; Institutional capacity and rule of law

II. Objectives and Justification of the TC

- 2.1 The quarantine measures imposed as a consequence of the COVID-19 pandemic meant that National Statistical Offices (NSO) were not able to be on the field knocking on doors collecting data directly from individuals. In fact, data collection came to a stop in most countries across the world as many NSO did not have alternative methods readily available to conduct field work operations. Colombia was not the exception and the National Administrative Department of Statistics (DANE, for its acronym in Spanish) was forced to suspend all field work while non-contact methods were developed and scaled up.
- 2.2 The COVID-19 pandemic presented a crisis for DANE in two fronts, on one side the need to come up with alternative ways to continue its regular data production, and on the other increased pressure to provide more data to understand the impact of the pandemic on the economy and society. This led to a push to accelerate ongoing innovation efforts, but also to look for successful experiences to learn from.
- 2.3 In the Latin America and the Caribbean (LAC) region, DANE has been a leader in innovation. In 2005, Colombia conducted its population census using handheld

devices for data collection for the first time, making the country a pioneer in the large-scale application of this technology. The use of handheld devices helped to improve the data delivery timeliness, made the field work more efficient for the enumerators, and increased the quality of the information generated by the census.¹

- 2.4 The use of online data collection has been widely used with success by Korea,² Canada³ and Australia,⁴ and was widely used in the USA⁵ in the 2020 population census. In 2018 Colombia pioneered in the region the use of a web-based questionnaire for self-response in its population census. It was the first large scale effort in LAC. The response rate through this method was 12.5%.⁶ This experience prepared DANE to face the challenges of non-contact data collection during COVID-19 and highlighted the complexity of having a multimodal census and the need to learn from international experiences.
- 2.5 More recently, the prevalence in the use of technology by citizens (particularly in their interactions with the government), and increased computing capacity and satellite images present opportunities for innovation in data collection processes and more efficient use of resources. The potential impact of these advances can best be assessed by first experimenting at scale and then determining whether they can be applied in large-scale data collection exercises.
- 2.6 One of the goals proposed by DANE is to promote technical and methodological innovation in household-level data collection that will allow for a continuous flow of data even when face-to-face data collection is not possible. To this end, DANE is looking for opportunities to learn from the experiences of others and introduce innovations that allow for remote data collection, which in turn could increase the efficiency in the use of available resources and achieve a more agile and easier field operation.
- 2.7 Another area of work is the statistical use of administrative records, and the integration of data from administrative records with data from other data sources, such as the population census. The potential benefits are clear in terms of improved efficiency in data production, increased dissemination opportunity, and reduced burden for the informants and field data collectors. However, implementation challenges can only be assessed through peer-to-peer learning from successful experiences.
- 2.8 **Objective.** Thus, the general objective of this project is to support the National Statistical Office of Colombia, DANE, through the introduction of technical and methodological innovations that allow the strengthening of alternative data collection methods, as well as the integration and mainstreamed use of administrative records to improve its capacity to produce timely, reliable, and accessible data.
- 2.9 This proposal is in line with the recommendations of the Conference of European Statisticians for the census round 2020⁷ and the experience of Statistics Korea

¹ [Guidelines on the use of electronic data collection technologies in population and housing censuses.](#)

² [Statistics Korea.](#)

³ [The Internet: A New Collection Method for the Census.](#)

⁴ [How we collected your information - the what, who, when, why and how of the Australian Census.](#)

⁵ [Internet Data Collection.](#)

⁶ [Informe Comité Expertos Nacional.](#)

⁷ [Conference of European Statisticians: Recommendations for the 2020 Censuses of Population and Housing.](#)

(KOSTAT) in the 2005, 2010, 2015 and 2020 population censuses⁸. KOSTAT's success in integrating administrative data as the base for the census and using a web-based census questionnaire to complement the data collection exercise are clear benchmarks from which there is much to learn.

- 2.10 Another area of work is to make a more intensive use of the administrative data generated by other government agencies. Harnessing the potential of administrative records for statistical purposes can also help reduce the costs of data collection and minimize the need to conduct face-to-face field data operations. This along with exploring the use of non-traditional data sources (i.e., Big Data, satellite imagery, mobile phone data, etc.) can complement the production of official statistics.
- 2.11 KOSTAT is at the forefront on the use of non-traditional data sources to produce official statistics. It has been working with mobile phone companies since 2017 to analyze population mobility, this work was key in providing useful data in the context of the COVID-19 pandemic.⁹ KOSTAT has also pioneered partnerships with private data providers to increase the power of data by merging public and private information to serve the public good with due care to protect personal information.¹⁰
- 2.12 The Bank's assistance through this Technical Cooperation will have the following specific objectives: (i) to support DANE in the piloting of technical and methodological innovations for remote data collection in the context of the restrictions imposed on field work operations by COVID-19; (ii) to promote a more intensive statistical use of administrative records; and (iii) to explore the use of non-traditional data sources to produce official statistics. These activities will also include training, technical advice, and exchange of experiences with other NSO in LAC.
- 2.13 This project builds on previous support that the Bank has received from KOSTAT to promote statistical capacity building in LAC, including a high-level event held in Daejeon in 2013 (Regional Seminar on Strengthening National Statistical Systems) which hosted directors from NSO from the region. KOSTAT experts have provided technical assistance in e-learning and GIS to Ecuador and Peru, in strengthening the use of administrative records to Ecuador, and through the Korea Trust Fund to strengthen the population census in Belize.
- 2.14 This Technical Cooperation is linked to the operational support that the IDB has given to finance projects for the development of population censuses and the institutional strengthening of LAC NSOs, including Belize (BL-T1092), Argentina (AR-L1266), Haiti (HA-L1126), Honduras (HO-L1044), and Paraguay (PR-L1176). This project will contribute to maintain an active presence in Colombia, a leading country in statistics in the region, which now heads the Economic Commission for Latin America and the Caribbean (ECLAC)'s Statistical Conference of the Americas (SCA). Some of the lessons learned from these experiences indicate the relevance of piloting in a small scale before fully implementing innovative methods and technology, ensure that the technical staff of the NSO has full ownership of the innovations (not just management), and underline that technology is a tool not a goal.
- 2.15 This TC is consistent with the Update to the Institutional Strategy 2020-2023 (AB-3190-2) and is aligned with the "Productivity and Innovation"

⁸ [Statistics Korea.](#)

⁹ [Statistics Korea.](#)

¹⁰ [Cases on the Analytical Use of Mobile Data.](#)

development challenge since it will contribute to lay the foundations to improve the functioning of the NSO. It will contribute to the indicators of the Corporate Results Framework (GN-2727-12) for agencies with strengthened digital technology and managerial capacity since it will increase the number of government agencies that have strengthened technological and management instruments for the provision of public services. The TC is also aligned with the cross-cutting issue “Institutional Capacity and the Rule of Law”. Its results are consistent with the Strategy for Strengthening and Use of Country Systems (GN-2538-14) as it will impact the capacity of the statistical system. The TC is aligned to the objectives of the Knowledge Partnership Korea Fund for Technology and Innovation (KPK) as it promotes the increase in the capacity of institutions to use information technology.

- 2.16 The TC is aligned with the 2019-2022 IDB Country Strategy for Colombia¹¹ as well as the objectives of the Colombian Government, as it will contribute to strengthen the efficiency and effectiveness of government institutions at the federal, state, and municipal levels.

III. Description of activities/components and budget

- 3.1 **Component 1. Non-traditional data sources and data collection methods (US\$200,000).** This component will fund pilot exercises to evaluate the use of non-traditional data sources to produce official statistics (i.e., mobile phone data), and the use of online data collection as a tool to facilitate the field work in the context of the mobility limitations imposed by the COVID-19 pandemic. Activities under this component include the design and implementation of a series of pilots on the use of non-traditional data sources, and trainings to DANE staff in the use of new technologies and the documentation of the lessons learned. These pilots will serve as opportunities to apply KOSTAT’s experience to develop new research work at DANE. The technical support to DANE will be provided by KOSTAT directly or through a specialized firm/entity with experience in the design and implementation of Internet-based data collection.
- 3.2 Resources under this component will finance: (i) the hiring of a firm or individual consultant(s) to support a pilot exercise on the use of mobile phone data (i.e. call detail records) to model intra and inter-city mobility; (ii) to procure access to data from a mobile phone operator; (iii) contracting a firm or individual consultant(s) to develop a pilot exercise on the use of satellite images to monitor urban growth and deforestation; and, (iv) to purchase access to high resolution satellite imagery.
- 3.3 **Component 2. Statistical use of administrative records (US\$80,000).** This component will finance pilots on the use and combination of data from different administrative sources to complement DANE’s data collection work. These include the creation of a national inventory of addresses and associated telephone numbers to facilitate remote data collection. The work carried out in this component will benefit from KOSTAT’s experience and will be an opportunity for DANE to conduct guided research in the subject. The activities in this component will be undertaken by specialized individual consultants under the technical guidance of KOSTAT.
- 3.4 Resources under this component will finance the hiring of individual consultants to: (i) support the design and implementation of a pilot exercise on the integration of

¹¹ [IADB Country Strategies](#).

administrative data with data from the population census and/or household surveys; and (ii) develop a pilot exercise on the extended use of an administrative register to regularly update a national inventory of addresses.

- 3.5 **Component 3. Documentation and dissemination (US\$120,000).** This component will finance the documentation of all the results of the tests carried out in the previous components with the objective of impacting other data collection processes carried out by DANE (i.e., household surveys), and making the lessons learned in this operation available to other countries. The activities of this component include the systematization of all the documentation generated by the project and the organization of a seminar with experts from KOSTAT and personnel of all technical areas of DANE. The activities in this component will be carried out by KOSTAT experts and individual consultants.
- 3.6 Resources under this component will finance the hiring of individual consultants to: (i) produce three reports documenting the results of the activities of this technical cooperation; (ii) develop a document with a strategy to widely disseminate the results of this project; and (iii) design and implement a training seminar to disseminate the knowledge created under this technical cooperation. This component will also fund: (i) the logistical support to implement the training seminar (including translation/interpretation); and (ii) travel and per diem for 10 KOSTAT experts to participate as trainers in the event (to be held in Bogotá). The experts from KOSTAT will be those nominated by the institution's management. The participants from DANE will be nominated by the institution's Director and will come from all technical areas directly benefited by this TC.
- 3.7 Products: As part of **Component 1**, the following products will be generated:
- i. Two pilot exercises on the use of non-traditional data sources to produce indicators to complement official statistics. The final topics will be agreed between KOSTAT and DANE based on interest and data availability. Two potential examples are:
 - Mobile data to monitor intracity mobility and intercity migration.
 - Satellite imagery to detect urban growth.
- 3.8 As part of **Component 2**, the following products will be generated:
- ii. One pilot exercise on the integration of an administrative register with the data from the population census and/or a household survey.
 - iii. One pilot exercise on the extended use of an administrative register to regularly update a national inventory of addresses.
- 3.9 The products resulting from **Component 3** will include:
- i. One report to fully document the process and results of using non-traditional data sources to produce official statistics.
 - ii. One report to fully document the process and results of integrating data from administrative registers with data from other sources.
 - iii. One report to fully document the process and results of producing official statistics from an administrative register.
 - iv. One strategy to disseminate the results of this technical cooperation.

- v. One training plan to extend the knowledge created under this TC to all areas of DANE.

3.1 **Indicative Budget:** The total cost of this TC will be US\$400,000.00, which will be financed entirely by the Knowledge Partnership Korea Fund for Technology and Innovation (KPK).

Indicative Budget			
Activity/Component	Description	IDB/Fund Funding	Total Funding
Component 1. Non-traditional data sources and data collection methods		200,000	200,000
Two pilot exercises on the use of non-traditional data sources to produce indicators to complement official statistics. The final topics will be agreed between KOSTAT, and DANE based on interest and data availability. Two potential examples are:	a) Mobile data to monitor intracity mobility and intercity migration. – Contracting of consulting firm (US\$80,000) – Contracting of data access (US\$20,000)	100,000	100,000
	b) Satellite imagery to detect urban growth and deforestation. – Contracting of consulting firm (US\$70,000) – Contracting of data access (US\$30,000)	100,000	100,000
Component 2. Statistical use of administrative records		80,000	80,000
Two pilot exercises on the statistical use of administrative records	a) One pilot exercise on the integration of an administrative register with the data from the population census and/or a household survey. – Individual consultant US\$10,000 per month for 4 months.	40,000	40,000
	b) One pilot exercise on the extended use of an administrative register to regularly generate official data. – Individual consultant US\$10,000 per month for 4 months.	40,000	40,000
Component 3. Documentation and dissemination		120,000	120,000
Three reports to fully document the process and results of:	a) Using non-traditional data sources to produce official statistics. – Individual consultant US\$10,000 per month for 1 month.	30,000	30,000
	b) Integrating data from administrative registers with data from other sources. – Individual consultant US\$10,000 per month, for 1 month.		
	c) Producing official statistics from an administrative register. – Individual consultant US\$10,000 per month for 1 month.		

Activity/Component	Description	IDB/Fund Funding	Total Funding
	d) One strategy to disseminate the results of this technical cooperation. – Individual consultant US\$10,000 per month, for 2 months.	20,000	20,000
	e) One training plan to extend the knowledge created under this TC to all areas of DANE (seminar). – Travel for KOSTAT experts: – Airline ticket US\$3,200 (round trip Seoul-Bogota) – Per diem US\$2,800 (one week) – Total cost per trip per person: US\$6,000 – 10 KOSTAT experts one trip each – Logistical support for seminar US\$10,000	70,000	70,000
Total		400,000	400,000

IV. Executing agency and execution structure

- 4.1 The IDB, through IFD/ICS, will be responsible for the execution of this TC. The IDB has extensive experience in the provision and coordination of technical assistance and in the development of advances in capacity building and the institutional strengthening of NSOs. The IDB can also contribute to the generation of innovative solutions by attracting experts who are producing advanced knowledge on issues related to the implementation of population censuses in other parts of the world. The execution by the IDB is justified by the request from the beneficiary as well as by the Bank's experience in strengthening national statistical offices and facilitating international and regional cooperation to build statistical capacity. The execution by the Bank is aligned with the justifications established in Annex II of document OP-619-4.
- 4.2 The TC will be executed by the sector specialist in IFD/ICS (José Antonio Mejía) and supervised by the ICS sector specialist responsible for Colombia (Francesco de Simone). There will be no supervision costs for the Country Office. Supervision will include the monitoring of TC progress and results; maintenance of up-to-date information and supporting documents related to the TC; periodically preparing reports regarding the status of the activities; and coordination of regular meetings with DANE and team members to monitor issues related to the TC execution.
- 4.3 Acquisitions and services will be carried out in accordance with the Bank's applicable policies and procedures, including the Policy for the Selection and Contracting of Consulting Firms for Bank-Executed Operational Work (GN-2765-4) and its operational guidelines (OP-1155-4), Complementary Workforce Policy (AM-650), and the IDB Corporate Procurement Policy (GN-2303-28).

V. Major issues

- 5.1 The main risk factors identified for the execution of the project are: (i) changes in the priorities of the execution objectives of the technical cooperation, (ii) institutional changes at DANE, and (iii) resistance to innovation. These risks are linked to the innovative feature of the solutions that are proposed to be explored with this operation.

- 5.2 In this regard, the Bank will promote a close dialogue with the DANE to ensure that the priorities are maintained in the objectives of the project and in the importance of keeping the technical cadres of officials involved in the direct execution of technical cooperation. Emphasis will be placed on the potential immediate positive impact of the introduction of innovations to make data collection possible in the context of limited mobility due to COVID-19, and in the use of resources more efficient within the framework of the budgetary restrictions faced by the government.
- 5.3 All knowledge products derived from this TC will be the Bank's intellectual property.

VI. Exceptions to Bank policy

- 6.1 There are no exceptions to Bank policies.

VII. Environmental and Social Strategy

- 7.1 This TC will not finance feasibility or pre-feasibility studies of investment projects or associated environmental and social studies; therefore, it does not have applicable requirements of the Bank's Environmental and Social Policy Framework (MPAS).

Required Annexes:

[Request from the Client - CO-T1644](#)

[Results Matrix - CO-T1644](#)

[Terms of Reference - CO-T1644](#)

[Procurement Plan - CO-T1644](#)