Standardizing population estimates to strengthen data quality and use in Côte d'Ivoire

Background

In Côte d'Ivoire, the *Institut National de Statistique* (INS) is in charge of producing and managing demographic data in the country. These data are used by the *Direction de l'Information Sanitaire* (DIS) to estimate target populations for all programs in the health sector. These target population estimates are essential for calculating health program performance indicators, which help stakeholders understand things like the extent of an intervention's coverage, how much a service is being used, and more. When calculating these indicators, target population estimates appear as the denominator—representing the total group of people that a program is targeting.

Population data is based on a census, but these are expensive and difficult to conduct—and therefore, they are not done very often (e.g., every 10 years). Populations change over time due to growth and migration, and to keep up, DIS estimates national and subnational populations year to year using a growth rate and other factors. Often these estimates are poor, particularly if it's been a long time since the last census. As a result, some health programs in Côte d'Ivoire establish and use their own population denominators (which differ from those proposed by DIS) because most of these programs consider INS data to be either overestimated or underestimated.

Because of this, the national District Health Information Software 2 (DHIS2) system contains several different denominators for various health programs. This affects data quality, analysis, and interpretation, as well as evidence-based decision making—and importantly, it could compromise the credibility of the country's data at national and international levels.

USAID and other decision makers have identified this as a challenge for the country's data reliability.

Steps Taken

To address this problem, USAID's Country Health Information Systems and Data Use (CHISU) program organized a meeting (in collaboration with DIS) to discuss the importance of making Cote d'Ivoire's population data consistent (also known as harmonizing the data) and how to approach it. This meeting brought together several health programs, including INS; the *Programme National de Lutte contre le Paludisme* (PNLP); the *Programme National de la Santé Mère Enfant* (PNSME); the *Direction de Coordination du Programme Elargi de Vaccination* (DCPEV), which is in charge of vaccination programming in the country; and the USAID Côte d'Ivoire Mission. By the end of this workshop, participants suggested that another meeting was necessary to harmonize the population data and their request was approved by the USAID Mission in Côte d'Ivoire.

The aim of the second workshop was to establish a method for estimating consistent population denominators for all health programs.

Participants at the first workshop on harmonizing population denominators, which included participants from various health programs, DIS, INS, DCPEV, PNLP, and the USAID Côte d'Ivoire Mission. Photo credit: CHISU

During the second workshop, the first step was to present the different estimation methods used by the various health programs. Following that presentation, participants split into two working groups.

The group work involved:

- Presenting each health program's indicators
- Presenting the method used to estimate the denominator of each indicator
- Sharing ideas between participants

- Hearing from INS about the estimation method
- Discussing group work results in the plenary, followed by discussion to validate methods for calculating the denominators

For two days, participants continued to work in groups, and on the final day they presented their results in a plenary session.

More participants attended the second worksop than the first one, and represented DIS, INS, DCPEV, PNLP, Health Information System Program Côte d'Ivoire (HISP-CI), *Programme National de Nutrition* (the organization in charge of DHIS2 development in Côte d'Ivoire), PNSME, Grand-Bassam health district, and CHISU.

Participants at the second workshop on harmonizing population denominators, which included participants from DIS, INS, DCPEV, PNLP, HISP-CI, Grand-Bassam health district, PNN, PNSME, and CHISU. Photo credit: CHISU
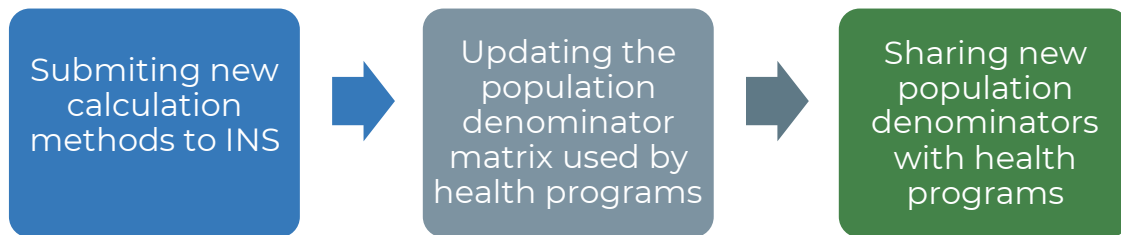
Results + Next Steps

INS used various methods to harmonize the data. These included:

- Adjusting the age group-specific population estimates using smoothing techniques
- Harmonizing among stakeholders the growth rates for various age groups between 1998 and 2021

By the end of the workshop, participants estimated a growth rate of 1.9 percent for the 0–11 months age group (the reference group for all calculations) and concluded that a 2.9 percent growth rate is applicable for determining the overall population size from 1998 until now.

This work produced a harmonized population denominator suitable for all health programs in the country, and will allow for greater consistency in analyzing indicators across programs.

Next steps for formalizing these results include:

Submiting new calculation methods to INS	→	Updating the population denominator matrix used by health programs	→	Sharing new population denominators with health programs

CHISU and DIS will organize a feedback workshop with stakeholders, including decision makers and program managers. At the end of this workshop, and with the validation of all health programs involved, Côte d'Ivoire will finally have harmonized its population data—allowing the country to get a better picture of health program effectiveness to help them allocate resources going forward.