Development and dissemination of the ATLAS software package: A tool for simulations and actuarial valuations

A case of the Directorate of Insurance and Social Welfare

Directorate of Insurance and Social Welfare
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Summary

The Directorate of Workers' Social Protection (Direction de la Protection Sociale des Travailleurs (DAPS)) developed the ATLAS software as part of the reflection on and reform of pension schemes in Morocco. It is designed to respond to the specificities of Moroccan pension schemes. It can be used to develop projections that will assist in piloting these schemes by producing:

- demographic indicators (among which are contributing members, retirees and widow(er)s);
- financial indicators (contributions and in-kind benefits);
- available reserve funds;
- funding commitments of the scheme (ABO and PBO);
- calculations of break-even contribution rates (scaled premiums).

ATLAS can also process several retirement schemes simultaneously and produce projections with a 100-year time horizon.

In addition, it can simulate reforms under consideration and their impact on the equilibrium of schemes and the rights of members.

ATLAS was used to develop projections of reform scenarios as part of the work of the National Committee for Pension Reform, chaired by the Head of Government.

CRITERIA 1

What was the issue/problem/challenge addressed by your good practice?

- To develop an actuarial projection tool adapted to the specificities of Moroccan retirement schemes.
- Tool to be mastered by the DAPS, which holds the software's source code.
- To be able to respond quickly and independently (without seeking assistance from outside firms) to simulations requests from the National Committee or the Government.
- Enable the pension funds (the Pension Fund of Morocco (Caisse marocaine des retraites (CMR), the National Social Security Fund (Caisse nationale de sécurité sociale (CNSS)) and the Collective Scheme for Retirement Allowances (Régime collectif d'allocation de retraite (RCAR)) to produce reliable actuarial balance sheets.
• Compared to the tools that the pension funds used previously, Atlas is fast and flexible.

• ATLAS has facilitated information-sharing and communication between the DAPS and the pension funds.

CRITERIA 2

What were the main objectives and the expected outcomes?

• To develop the expertise needed within the DAPS and, subsequently, within the pension funds to execute actuarial projections.

• To avoid using "black box" tools using equations and computer codes that have not been fully understood.

• To be able to assess the reforms and their impact on employers, members and retirees.

CRITERIA 3

What is the innovative approach/strategy followed to achieve the objectives?

• The DAPS set up a team of actuaries specialized in pension scheme issues.

• A specialized firm (ACTUARIA) was brought in to support the project from the CPS programming (the equations) to the development of the software package.

• The tool was disseminated gradually to three pension funds (CMR, CNSS and RCAR).

• Ongoing training and technical assistance are provided to the three funds' technical teams.

• The tool is adapted and updated whenever necessary.
CRITERIA 4

Have the resources and inputs been used in an optimal way to achieve the set objectives and the expected outcomes? Please specify what internal or external evaluations of the practice have taken place and what impact/results have been identified/achieved so far.

- The entire project was financed by contributions from international institutions.
- The DAPS mobilized its internal experts (actuaries and IT specialists) to support ACTUARIA and complete the project.
- The results of the projections were compared to those generated by other tools. ATLAS evaluations were well-received by the International Labour Organisation and the World Bank.
- The actuarial balance sheets of the pension funds (CMR) based on ATLAS projections are certified annually by independent firms.

CRITERIA 5

What lessons have been learned? To what extent would your good practice be appropriate for replication by other social security institutions?

- It is more appropriate to use an internally developed actuarial simulation tool to control its inputs and outputs and make the necessary improvements as and when needed.
- It is important to have consolidated results for all the pension schemes for communication, comparison, and piloting purposes and for the development of eventual reform measures.
- ATLAS has contributed significantly to the production of information needed to enrich the debate about pension reform in Morocco.
- The pension schemes should use the same simulation tool, to facilitate information-sharing and promotes the development of a shared vision between scheme management and the technical and financial supervisory authorities.
- The Ministry of Economy and Finance is prepared to share this experience with other ISSA member countries (dissemination of the ATLAS software package and technical assistance).