



**CAPE VERDE**  
**THRESHOLD 21-CV**  
**Report of the PRSP exercise in Cape Verde**  
**Praia, February 2004**

**I. INTRODUCTION**

**Preparation of PRSP Scenarios:** The Government of Cape Verde (GoCV) has developed viable quantitative scenarios to strengthen its PRSP exercise and for comprehensive national development planning. Using trust fund resources, it engaged the Millennium Institute to develop and apply a customized version of the widely used Threshold 21 dynamic model in the preparation of the PRSP. GoCV staff was intimately involved in design and calibration of the T21-CV model and have been trained in its use. A full description of the model and a series of scenarios created in its initial applications is available in the Interim Report of January 20, 2004.<sup>1</sup>

GoCV is using T21-CV in the preparation of the initial draft of the PRSP of 2004. This exercise is concentrated primarily on the near future and serves as a basis for discussions with the IMF and World Bank and negotiations for their respective poverty reduction grants and credits (PRGF and PRSC). Most attention in T21-CV is consequently focused on the period 2004-7. However, one of the advantages of this model is that it runs scenarios out 25 years; permitting users to see some of the longer term implications of the policies and assumptions used. In addition, it allows GoCV to examine implications of alternative policies over the longer term. More work will be done on these options in future work with the model and may be incorporated into later drafts of the PRSP to better embed it into the longer-term strategy of the government that needs to address longer-term trends.

**Brief summary of the activities conducted:** In February 2004 Mr. Pinheiro requested additional technical support to simulate, with the use of T21, the macro scenarios necessary to prepare the first draft of the PRSP. Matteo Pedercini visited Cape Verde in February 2004, to provide the technical support needed to prepare and run the scenarios, and providing additional training. As a result, three initial scenarios have been built, with high, medium and low growth projections. These have been used as a base of discussion for the macro framework underlying the PRSP.

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<sup>1</sup> This model has also been used by the World Bank in the analysis of its Development Policy Report for Cape Verde.

The Direction of Planning of Cape Verde has created a PRSP task force, headed by Mr. M. Lima. The PRSP task force, and Mr. Pedercini, Mr. Pinheiro and other key technicians in the Direction of Planning have met in various occasions to discuss and define the macro framework for the PRSP. Based on the set of assumptions on which the PRSP task force agreed, Mr. Pedercini, together with the local technicians, has simulated a first version of the scenarios for the PRSP. These first scenarios have been discussed and some modifications have been introduced. The resulting scenarios will be used by the government in its initial work preparing the PRSP.

While preparing the scenarios for the PRSP, Mr. Pedercini conducted a special training for one of the technicians at the Direction of Planning, Mr. Samori Pires. The training had the aim of illustrating the procedure used to build the scenarios and to analyse the results produced. As a result of the training, Mr. Pires was able to run new scenarios and organize the data produced.

Finally, the dates for the final training session of 2 weeks in Cape Verde have been discussed and agreed. Mr. Pedercini will visit Cape Verde again for two weeks, starting the last week of May 2004.

## **II. KEY ASSUMPTIONS AND RESULTS**

**Key Assumptions:** This initial exercise looks at the implications of three growth alternatives over the 2004-7 period, corresponding to the IMF's period of analysis. The three options are High (7% p.a.), Medium (6% p.a.), and Low (5% p.a.) GDP growth. While the IMF growth assumptions are for aggregate GDP growth, T21-CV breaks down the growth by major sector – Agriculture, Industry, and Services (with a special breakout of the Tourism subsector) – so that the implications of growth can be better understood for the different parts of the country.

The overall pattern of government revenues, expenditures, and trade flows in T21-CV follow the exogenous assumptions of the IMF closely, though they are generated by the internal structure of the model. T21-CV generates slightly higher growth rates of both imports and exports than the IMF assumptions, based partly on the links to total world economic growth rather than just OECD growth. However, the assumptions about foreign capital inflows are the same and remittances slightly lower than the IMF, so the overall external balances are very close. There is one significant difference on the fiscal account. The IMF assumes the current tax structure remains the same. T21-CV incorporates the government's proposed tax reform, lowering trade taxes and replacing the foregone revenues with higher VAT taxes. The overall IMF constraint on the government deficit of 3% of GDP is maintained.

The other major assumptions of the IMF framework for Cape Verde's prospects are respected in T21-CV. In some cases, definitions and aggregations are slightly different, but the details have been carefully reviewed to assure consistency with the IMF assumptions, such as income velocity (1.5), the growth of credit to the economy (12.5%), etc. Tables of comparison over the period 2002-7 have been prepared and can be made

available. Since T21-CV covers a much wider range of variables and interactions and runs over a longer time period than the IMF financial planning model, it also demonstrates the longer term effects of policy choices and how the policy choices can be modified over time. Some of this will be discussed below.

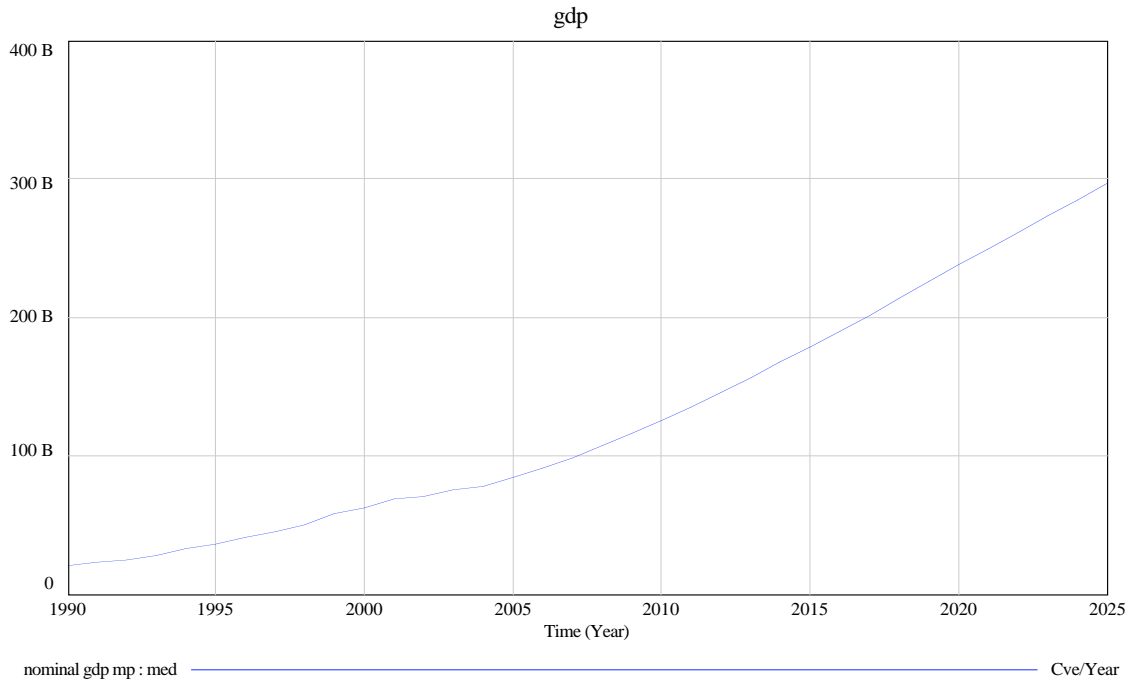
In this exercise, certain IMF assumptions were exogenously assumed in the T21-CV model for the 2004-7 period, and then it was allowed to run on its endogenous relations. In other cases, the model was adapted to generate results that closely tracked IMF assumptions. This is an important piece of analysis as it shows that these IMF assumptions are consistent with the inherent dynamic relations of the economy as represented in T21, which has been validated and calibrated over a longer time period and across a broader set of variables.

**Analysis of Results:** Overall for the period 2004-7, T21-CV paralleled very closely the results of the IMF framework, based on the similar assumptions. Most of the analysis to date has been on the Medium growth scenario (6% p.a.). That T21-CV produced a growth rate that averaged very close to 6% over the time period involved confirms the validity of the internal structure of the model and the realism of this growth target. Since T21-CV disaggregates growth by sector, it is also possible to examine how the growth will be distributed. Growth in Agriculture is flat, Industry grows at about 4.4%, and services leads with growth of about 7%.

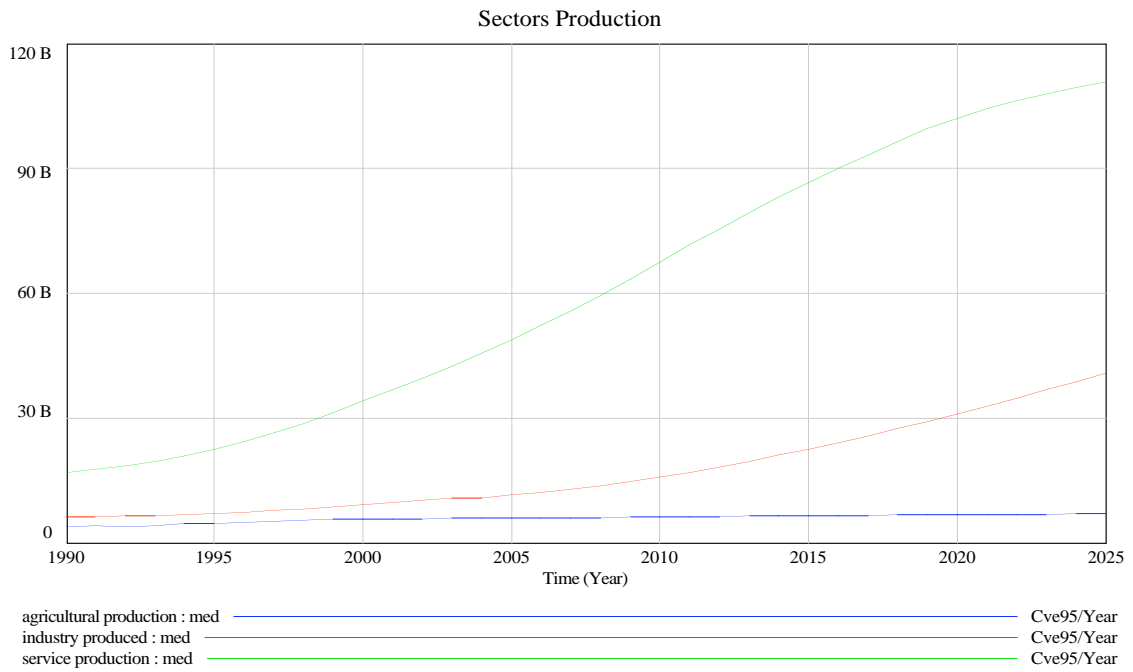
**Table I: Growth Rates** (% per year)

<u>Sector/Time Period</u>	<u>2000-2003</u>	<u>2004-2007</u>	<u>2008-2012</u>
Agriculture	1.7	0.0	1.04
Industry	5.6	4.4	7,7
Services	8.0	7.0	6.1
Tourism	12.7	15.6	15.0
GDP	6.9	5.9	6.0

## Graph I: nominal GDP



## Graph II: Agriculture, Industry and Services production



The lack of growth in agriculture, which employs the bulk of the population, is due to the paucity of fertile land and lack of adequate water. This sector is not likely to improve its growth in the short term unless there is very favorable weather or the government implements programs to improve arid agriculture, drawing on techniques developed in Israel and other arid countries. Industry growth is satisfactory, but is limited by the small scale of the local market and export market access. Significant attention will have to be devoted to developing niche export markets to spur more growth here. Services is the key sector to sustain growth. And this is led by tourism. For this growth to be maintained, there will have to be adequate investment in infrastructure and strong marketing efforts. A sound medium term strategy to promote this sector is critical to Cape Verde maintaining its growth rate.

T21-CV also examined the High and Low cases by assuming different levels of productivity improvement in the different sectors. In Industry and Services sectors, in particular, lower growth would be associated with some loss of competitiveness in exports and lower domestic demand. Similarly in the High case, significant improvements in these sectors are feasible and could generate the higher growth rate. That would depend on the effectiveness of government policy and domestic capacity. Similar impacts on the growth rates could result from shocks in the agriculture sector, as a consequence of changes in the level of precipitations, or in the tourism sector, which is strongly dependent on the international economic situation.

The IMF framework does not consider the possible causal factors in the different growth rates, but rather looks at the impacts on the external, monetary, and fiscal balances. In T21-CV, it is possible to do a more detailed analysis of the causes of different growth rates. Some can be related to policies undertaken by the government – tax structure, incentives to trade and the tourism industry, or efficiency of government investment. Other causes may be due to external factors such as the weather, changes in demand for Cape Verde’s products, and shifts in tourism due to global concerns about travel. Understanding these factors will enable the government and its advisors to develop better policies.

While the focus of this has been on the short term, T21-CV also generates long term scenarios, and it is worth noting some of the results in this report. These findings are preliminary and have not yet received as much attention as the short term factors. But they are worth noting. In looking at longer term growth, we note that the GDP growth rate declines gradually the farther out the scenario goes. Initial analysis suggests this is in part due to assumptions that foreign grants, remittances, and investment remain constant over the longer period. This demonstrates how dependent Cape Verde is on foreign inflows. While they may continue to rise rather than remain constant, T21-CV gives an important signal that the government must continue to conduct its policies to assure increasing inflows of foreign resources.

The government and its international partners would do well to consider whether official grants and loans can be expected to continue to grow, and if not, how to increase the inflow of private resources. T21-CV also demonstrated that unless productivity increases at a reasonable rate, it will be very difficult to sustain the Medium growth rate. The continued low growth in agriculture implies there will be continued migration to urban areas and workers seeking jobs in industry and services. This means that expansion of education and vocational training, as well as policies that encourage local business and investment will be very important. However, given the cost of rapid population shifts, the government will also have to work over the medium term to increase production and incomes in the rural sector to manage the pace of urban growth. Supporting infrastructure will be vital, and the government will have to assure that its investments are highly productive in this framework. T21-CV will be used for more detailed analysis of these issues in the national planning process.

In fiscal policy, T21-CV maintained the IMF's target 3% of GDP deficit, which proved manageable and allowed a reduction in the government's debt. The model also incorporated the governments plan to reform the tax structure to lower trade (import) taxes and increase the domestic VAT. This is a sound policy and consistent with GoCV's goal to improve trade and its integration in the world markets while encouraging domestic production. In the short term, this change still allowed the government to achieve its budget targets. Over the longer term, the tax reform helps stimulate industry growth and sustain exports. But there is a continuing, though modest decline in tariff revenue which is not fully offset by increased VAT revenues. As a result, the share of total revenue in GDP declines marginally over the longer term. While manageable in the medium term, this is a potential cause for concern and highlights the importance of continued review of tax policies to be sure that they generate enough revenues to meet the government's needs to provide critical public services in education, health, infrastructure, and the like.

As an experiment, one additional scenario was run with T21-CV. In this case, the government budget deficit was allowed to increase to 5% of GDP, and the additional revenues were allocated proportionately across the whole budget. In the short term, differences were minor. Over the longer term, there was a small but measurable increase in growth and improvement in poverty reduction. Health and education indicators improved somewhat. On the other hand, the government debt also increased, and its financial stability was to some extent less secure. These results would not justify moving to a higher level of deficit by themselves. However, they do indicate the potential for additional research in this area. If the increase in deficit were smaller or limited in time, and if the increased resources were allocated directly into education, health, and perhaps critical infrastructure, the impacts on growth and poverty alleviation could be high enough to justify the slightly higher level of debt. And higher growth over time might well reduce the burden of the higher debt level. These early results do not indicate there should be a change in policy at this point, but they do indicate that more research is needed in this area to help design a better poverty reduction strategy and longer term development plan for Cape Verde.

**Conclusions:** The initial results of this application of T21-CV in the draft PRSP process and discussions with the IMF are very reassuring. T21-CV has successfully incorporated the major assumptions and macro balances of the IMF short-term framework and generated Low, Medium, and High scenarios over the period 2004-7 entirely consistent with the IMF framework. They confirm that the short term policies of Cape Verde are fiscally sound and can generate a satisfactory growth rate. And they demonstrate these results in the context of a model designed in cooperation with the government and that can be applied by its staff to this and future exercises.

Perhaps more important, T21-CV illustrates transparently how the policies interact across various sectors and what their long-term effects will be. The model highlights how growth will be distributed across sectors – showing how sector policy will have to be adapted and what kind of urban migration is to be expected that the government will have to deal with. The model also shows that the tax reform will work and have positive results, but it will have to be monitored carefully over time to assure that overall revenue generation remains adequate. However, the country's dependence on foreign inflows remains high and constitutes a long-term risk to sustainable development.

T21-CV can also be used for more comprehensive policy analysis. Initial exploration in this area suggests that additional expenditures in certain areas may improve poverty reduction and lead to faster growth than possible under current constraints. More analysis of this is needed before any policy proposals could be formulated. It is these kinds of analyses that will be critical to improving Cape Verde's prospects if it is to reduce its dependence on net foreign inflows. Further exercises will be included in the PRSP work.