

Defining NDC Scenarios for Chile with ISIM-IEEM

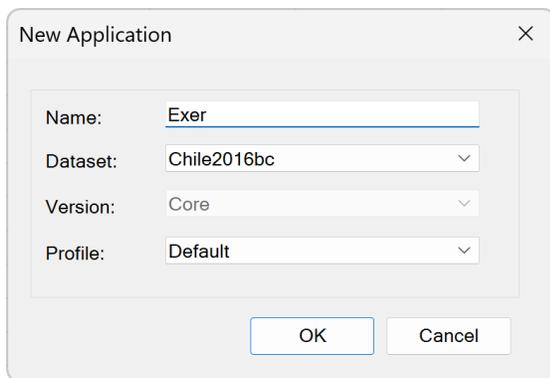
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In this document, we present the steps that must be followed to implement the NDC scenarios in IEEM Chile through the ISIM interface.

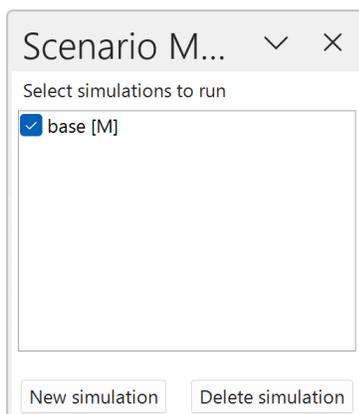
Step 1: create a new ISIM application of IEEM Chile

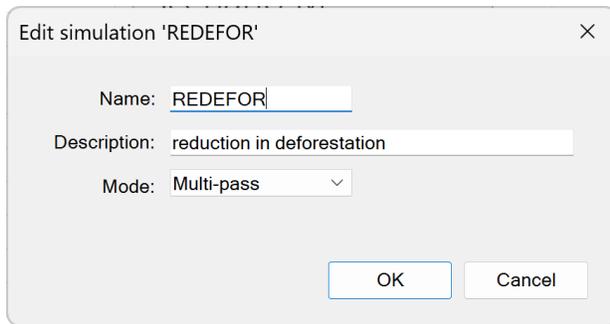
Open Excel and go to ISIM tab and click on New Application | In New Workbook, and make the following selection.



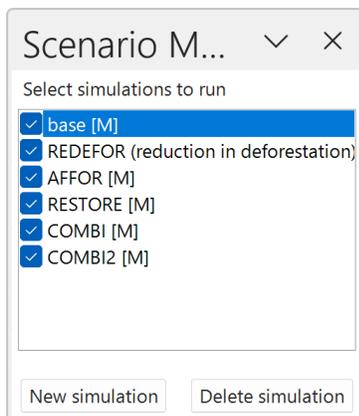
Step 2: create new scenarios using the Scenario Manager

Click on Scenario Manager and click on New simulation and introduce REDEFOR for new simulation name.





Next, click the following additional (new) simulations: AFFOR, RESTORE, COMBI, and COMBI2. The next figure shows the Scenario Manager including the five scenarios that we will now define.



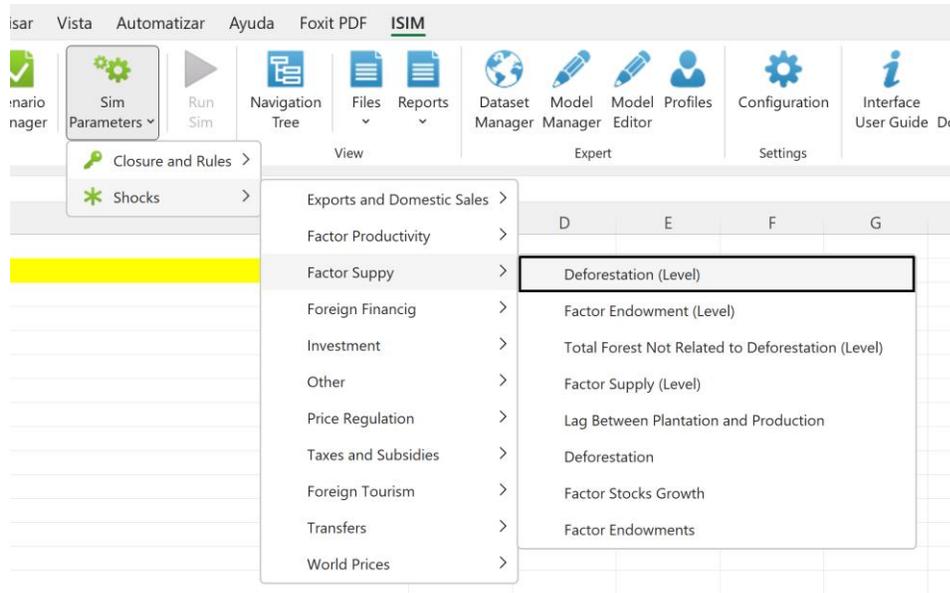
To define scenarios, we will use the information in the chl2016bc-sim.xlsx file available at <https://sites.google.com/view/ieem-chile/training-material>. This file contains all the elements required to define the NDC scenarios in IEEM Chile. Therefore, we leave as an exercise to carefully inspect the contents of this file.

Step 3: introduce changes in deforestation

Go to sheet dqdeforbsim in chl2016bc-sim.xlsx and copy its contents excluding the years.

dqdeforbsim(sim,Indfortot,t)		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
REDEFOR	fortot	0	0	0	0	0	0	0	-3,165	-6,267	-9,310
COMBI	fortot	0	0	0	0	0	0	0	-3,165	-6,267	-9,310
COMBI2	fortot	0	0	0	0	0	0	0	-3,165	-6,267	-9,310

Go to the ISIM application file and click on Sim Parameters | Shocks | Factor Supply | Deforestation (Level), add two (or more) rows, and paste the contents of dqdeforbsim.



A	B	C	D	E	F	G	H	I	J	K	L	M	N
dqdeforbsim(sim,Indfortot,t)		change in deforestation											
sim	Indfortot	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	
X	REDEFOR	fortot	0	0	0	0	0	0	-3164.9847	-6267.3587	-9309.6548	-12294.341	-1
X	COMBI	fortot	0	0	0	0	0	0	-3164.9847	-6267.3587	-9309.6548	-12294.341	-1
X	COMBI2	fortot	0	0	0	0	0	0	-3164.9847	-6267.3587	-9309.6548	-12294.341	-1
X													
X													
	Add row												

Step 4: introduce changes in forestry hectares

Go to sheet dqfsexogsim in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Factor Supply | Factor Supply (Level), add four (or more) rows, and paste the contents of dqfsexogsim.

A	B	C	D	E	F	G	H	I	J	K	L	M
dqfsexogsim(sim,f,t)		exogenous total factor supply										
sim	f	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
X	AFFOR	f-land-for	0	0	0	0	0	0	15000	25000	35000	
X	RESTORE	f-land-for	0	0	0	0	0	0	25000	25000	25000	
X	COMBI	f-land-for	0	0	0	0	0	0	40000	50000	60000	
X	COMBI2	f-land-for	0	0	0	0	0	0	40000	50000	60000	
X												
	Add row											

Step 5: introduce lag between tree plantation and start of forestry production

Go to sheet lagforprodsim in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Factor Supply | Lag Between Plantation and Production, add five (or more) rows, and paste the contents of lagforprodsim.

	A	B	C	D	E
9	lagforprodsim(sim,ffor)				<u>lag between</u>
0		sim	ffor		value
1	X	REDEFOR	f-land-for		10
2	X	AFFOR	f-land-for		10
3	X	RESTORE	f-land-for		10
4	X	COMBI	f-land-for		10
5	X	COMBI2	f-land-for		10
6	X				
7	Add row				
8					

Step 6: introduce changes in total forest land (i.e., forestry hectares + other forest)

Go to sheet dqfortotsim in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Factor Supply | Total Forest Not Related to Deforestation (Level), add four (or more) rows, and paste the contents of dqfortotsim.

Step 7: introduce changes in TFP due to erosion and pollination shocks

Go to sheet tfpexogsimin in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Factor Productivity | TFP Growth, add three (or more) rows, and paste the contents of tfpexogsim.

Step 8: introduce current cost of government interventions

Go to sheet costcongsim in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Other | Nominal Current Cost, add five (or more) rows, and paste the contents of costcongsim.

Step 9: introduce investment cost of government interventions

Go to sheet costinvgsim in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Investment | Nominal Investment Cost, add five (or more) rows, and paste the contents of costinvgsim.

Step 10: introduce government financing through foreign borrowing

Go to sheet NFFGSIM in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Foreign Financing | Government Net Foreign Financing, add five (or more) rows, and paste the contents of NFFGSIM.

Step 11: introduce government financing through foreign transfers

Go to sheet dtrnsfrsim in chl2016bc-sim.xlsx and copy its contents excluding the years.

Go to the ISIM application file and click on Sim Parameters | Shocks | Transfers | Transfers (Level), add five (or more) rows, and paste the contents of dtrnsfrsim.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	dtrnsfrsim(sim,ac,ins,t)			additional transfer from ins to ac										
2	sim	ac	ins		2016	2017	2018	2019	2020	2021	2022	2023	2024	2
3	X	REDEFOR	gov	row	0	0	0	0	0	0	0	0.5641872	1.68140069	3.34093
4	X	AFFOR	gov	row	0	0	0	0	0	0	0	7.67694279	12.7949046	17.9128
5	X	RESTORE	gov	row	0	0	0	0	0	0	0	6.39745232	6.39745232	6.39745
6	X	COMBI	gov	row	0	0	0	0	0	0	0	14.6385823	20.8737577	27.6512
7	X	COMBI2	gov	row	0	0	0	0	0	0	0	14.6385823	20.8737577	27.6512
8	X													
9		Add row												
0														

Step 12: select government closure

Go to the ISIM application file and click on Sim Parameters | Closure and Rules | Government and select option 1 (i.e., income tax rate is the clearing variable for the government budget) for all non-base scenarios.

	A	B	C	D	E
7	govclossim(sim,t)				closure r
8		sim	2016	2017	2
9	<input checked="" type="checkbox"/>	REDEFOR	1		
0	<input checked="" type="checkbox"/>	AFFOR	1		
1	<input checked="" type="checkbox"/>	RESTORE	1		
2	<input checked="" type="checkbox"/>	COMBI	1		
3	<input checked="" type="checkbox"/>	COMBI	1		
4	Add row				
5					

Step 13: select non-government savings-investment closure

Go to the ISIM application file and click on Sim Parameters | Closure and Rules | Savings-Investment and select option 1 (i.e., non-government investment is the clearing variable of the non-government savings-investment balance) for all non-base scenarios.

	A	B	C	D	E
83	siclossim(sim)				closure rule savings
84		sim	value		
85	<input checked="" type="checkbox"/>	REDEFOR	1		
86	<input checked="" type="checkbox"/>	AFFOR	1		
87	<input checked="" type="checkbox"/>	RESTORE	1		
88	<input checked="" type="checkbox"/>	COMBI	1		
89	<input checked="" type="checkbox"/>	COMBI2	1		
90	<input checked="" type="checkbox"/>				
91	Add row				
92					