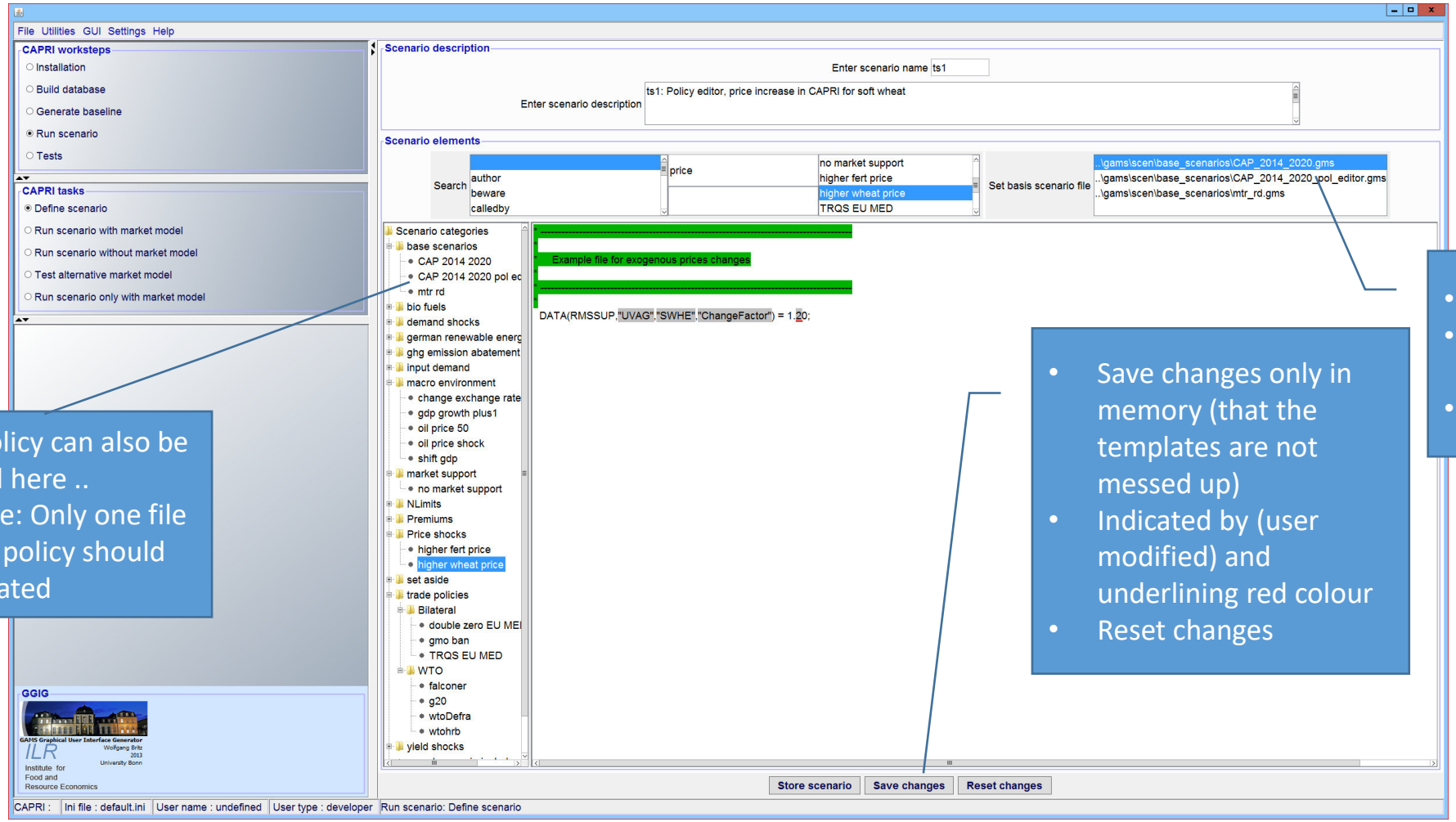
2. Different ways to run CAPRI

Exercise 1: Different ways to run CAPRI

- Define a scenario for a price increase of 10% for wheat in DK
  - via policy editor
  - via batch file
  - via GAMS ide
  - via command line

Exercise 1a: Running with policy editor

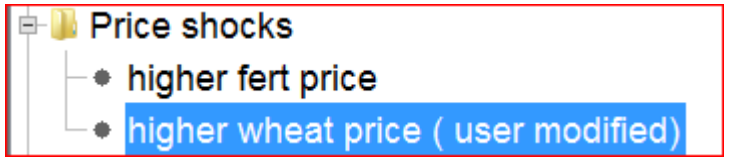
- Policy editor is a code snippet based way to explore and define simple scenarios
- It has dynamic tag editor
- Powerful search over all predefined scenarios
- Approach to define your scenario
  - Do not run as user role “administrator”
  - Select main policy file (cap_after2014 or MTR_RD) **and** combination of code snippets
  - Modify the code snippet or the main policy file and save the changes in a new in your userScen folder
- @All Exercise 1: Create a policy scenario (yields …) and run with GUI

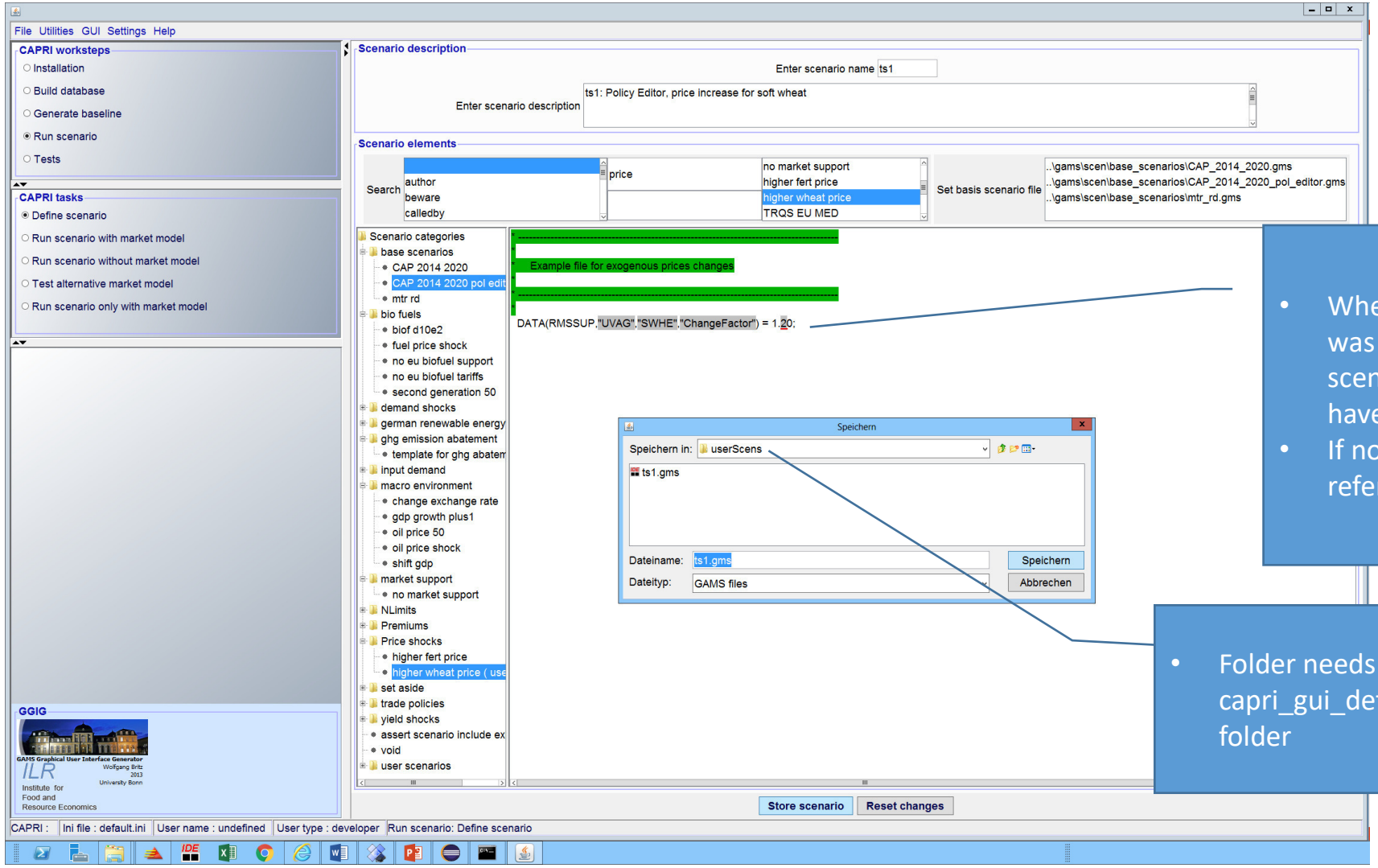


- Main policy can also be selected here ..
- Take care: Only one file as main policy should be activated

- Main Policy file
- Included at the top of the new scenario
- If not needed deselect

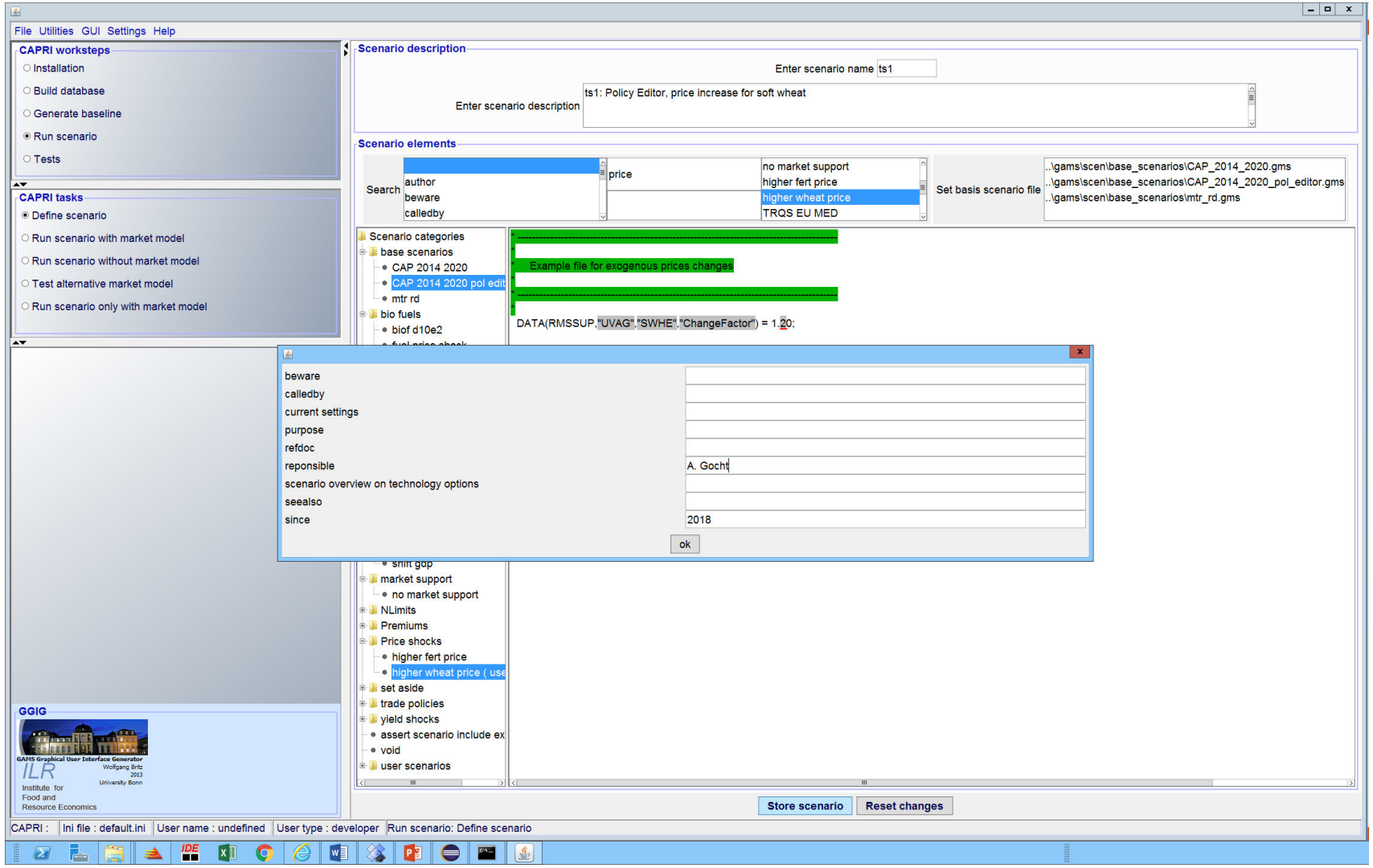
- Save changes only in memory (that the templates are not messed up)
- Indicated by (user modified) and underlining red colour
- Reset changes



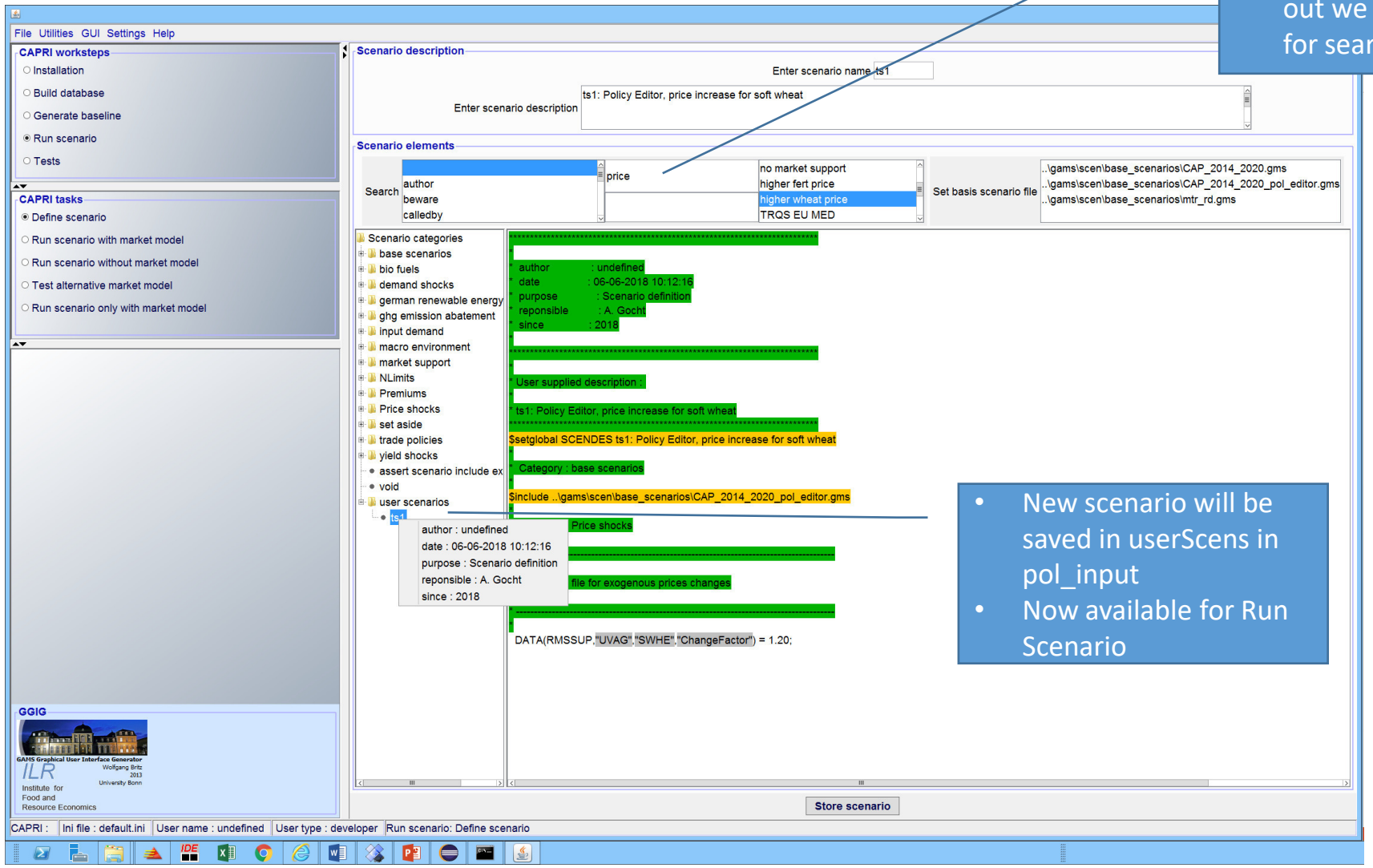


- When the template file was modified the new scenario file TS1 will have the modified code
- If not then a include reference will be used

- Folder needs to be set in capri_gui_definition.xml in GUI folder


File Utilities GUI Settings Help
CAPRI worksteps
Installation
Build database
Generate baseline
Run scenario
Tests
CAPRI tasks
Define scenario
Run scenario with market model
Run scenario without market model
Test alternative market model
Run scenario only with market model
GGIG
GAMS Graphical User Interface Generator
Wolfgang Britz
2013
University Bonn
ILR
Institute for Food and Resource Economics
Scenario description
Enter scenario name ts1
Enter scenario description ts1: Policy Editor, price increase for soft wheat
Scenario elements
Search
author
beware
calledby
price
no market support
higher fert price
higher wheat price
TRQS EU MED
Set basis scenario file
..\gams\scen\base_scenarios\CAP_2014_2020.gms
..\gams\scen\base_scenarios\CAP_2014_2020_pol_editor.gms
..\gams\scen\base_scenarios\mtr_rd.gms
Scenario categories
base scenarios
CAP 2014 2020
CAP 2014 2020 pol edit
mtr rd
bio fuels
biof d10e2
Example file for exogenous prices changes
DATA(RMSSUP,"UVAG","SWHE","ChangeFactor") = 1.20;
beware
calledby
current settings
purpose
refdoc
reponsible
A. Gocht
scenario overview on technology options
seealso
since
2018
ok
shift gdp
market support
no market support
NLimits
Premiums
Price shocks
higher fert price
higher wheat price (use
set aside
trade policies
yield shocks
assert scenario include ex
void
user scenarios
Store scenario
Reset changes
CAPRI :
Ini file : default.ini
User name : undefined
User type : developer
Run scenario: Define scenario

- If tags in the file head description are filled out we can use them for search



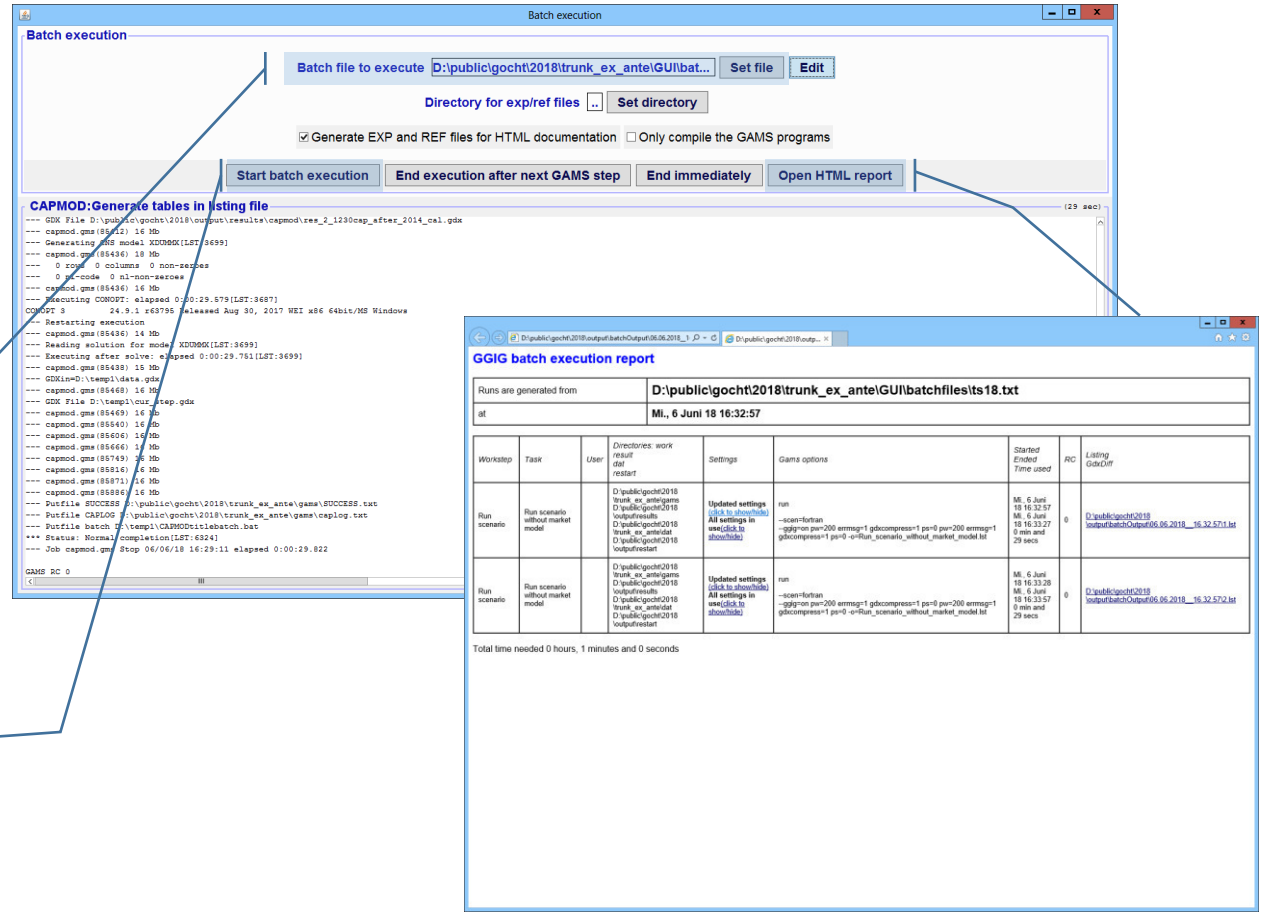
- New scenario will be saved in userScens in pol_input
- Now available for Run Scenario

Exercise 1b: Running via batch file

- The batch utility in the GGIG allows chain execution
- The option need to be set in a txt file
- We currently store all batch files in GUI\batchfiles
- The complete system is tested using build_database_and_baseline.txt
- Syntax of each task execution are written as commented text into the include file at the bottom

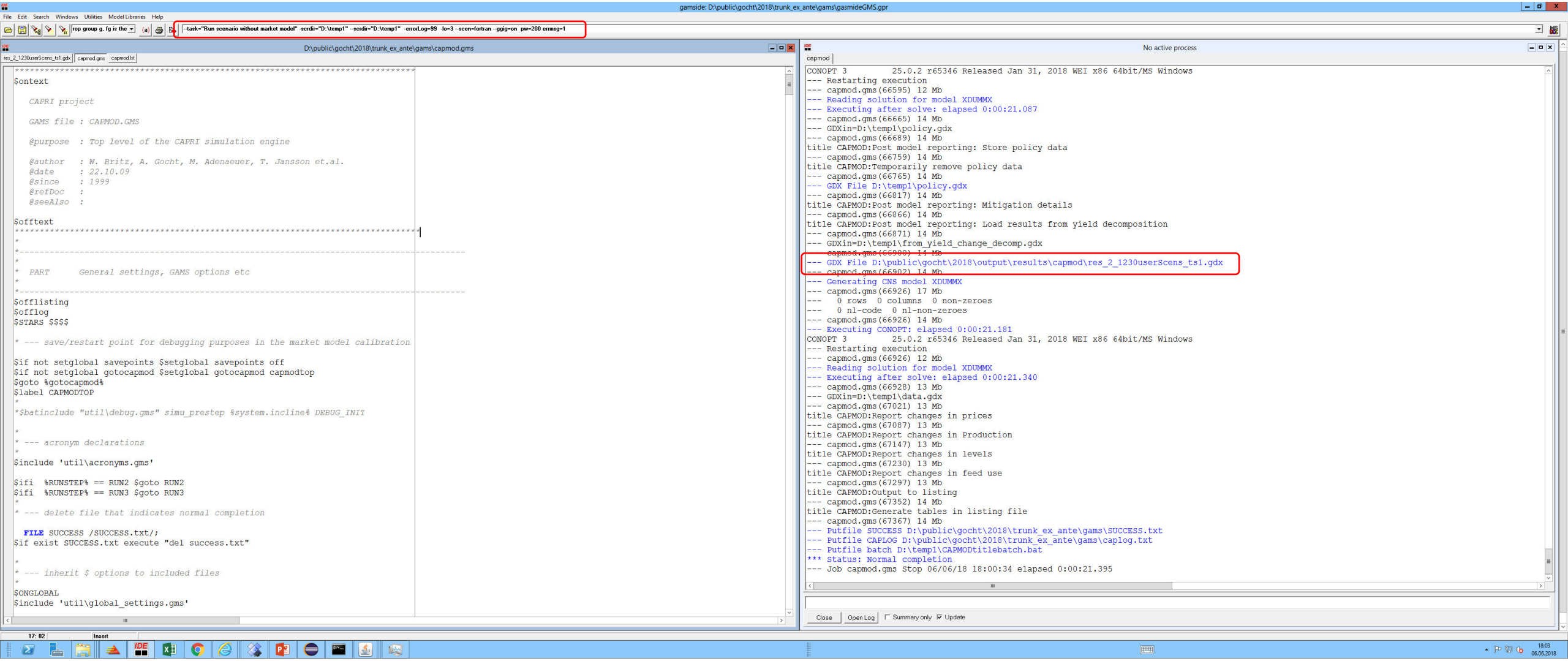
Exercise 1b: Running via batch file cnt.

- Create a text file in CAPRI\GUI\batchfiles
- Copy content of include file into it
- Open in GGIG GUI menu GUI->Batch execution
- Select batchfile
- Run (compile or execute)



Exercise 1c: Running via GAMSIDE

- Create GAMSIDE project in CAPRI\gams
- Open capmod.gms
- Create include file via GGIG copy common line parameters from GGIG into GAMSIDE


gamside: D:\public\gocht\2018\trunk_ex_ante\gams\gasmideGMS.gpr
File Edit Search Windows Utilities Model Libraries Help
--task="Run scenario without market model" -scrdir="D:\temp1" --scrdir="D:\temp1" -errorLog=99 -lo=3 --scen=fortran --ggig=on pw=200 errmsg=1
D:\public\gocht\2018\trunk_ex_ante\gams\capmod.gms
res_2_1230userScens_ts1.gdx
capmod.gms
capmod.lst
$ontext
CAPRI project
GAMS file : CAPMOD.GMS
@purpose : Top level of the CAPRI simulation engine
@author : W. Britz, A. Gocht, M. Adenaeuer, T. Jansson et.al.
@date : 22.10.09
@since : 1999
@refDoc :
@seeAlso :
$offtext
PART General settings, GAMS options etc
$offlisting
$offlog
$STARS $$$$
* --- save/restart point for debugging purposes in the market model calibration
$if not setglobal savepoints $setglobal savepoints off
$if not setglobal gotocapmod $setglobal gotocapmod capmodtop
$goto %gotocapmod%
$label CAPMODTOP
*$batinclude "util\debug.gms" simu_prestep %system.incline% DEBUG_INIT
* --- acronym declarations
$include 'util\acronyms.gms'
$ifi %RUNSTEP% == RUN2 $goto RUN2
$ifi %RUNSTEP% == RUN3 $goto RUN3
* --- delete file that indicates normal completion
FILE SUCCESS /SUCCESS.txt/;
$if exist SUCCESS.txt execute "del success.txt"
* --- inherit $ options to included files
$ONGLOBAL
$include 'util\global_settings.gms'
17: 82
Insert
No active process
capmod
CONOPT 3 25.0.2 r65346 Released Jan 31, 2018 WEI x86 64bit/MS Windows
--- Restarting execution
--- capmod.gms(66595) 12 Mb
--- Reading solution for model XDUMMX
--- Executing after solve: elapsed 0:00:21.087
--- capmod.gms(66665) 14 Mb
--- GDXin=D:\temp1\policy.gdx
--- capmod.gms(66689) 14 Mb
title CAPMOD:Post model reporting: Store policy data
--- capmod.gms(66759) 14 Mb
title CAPMOD:Temporarily remove policy data
--- capmod.gms(66765) 14 Mb
--- GDX File D:\temp1\policy.gdx
--- capmod.gms(66817) 14 Mb
title CAPMOD:Post model reporting: Mitigation details
--- capmod.gms(66866) 14 Mb
title CAPMOD:Post model reporting: Load results from yield decomposition
--- capmod.gms(66871) 14 Mb
--- GDXin=D:\temp1\from_yield_change_decomp.gdx
--- capmod.gms(66900) 14 Mb
--- GDX File D:\public\gocht\2018\output\results\capmod\res_2_1230userScens_ts1.gdx
--- capmod.gms(66902) 14 Mb
--- Generating CNS model XDUMMX
--- capmod.gms(66926) 17 Mb
--- 0 rows 0 columns 0 non-zeroes
--- 0 nl-code 0 nl-non-zeroes
--- capmod.gms(66926) 14 Mb
--- Executing CONOPT: elapsed 0:00:21.181
CONOPT 3 25.0.2 r65346 Released Jan 31, 2018 WEI x86 64bit/MS Windows
--- Restarting execution
--- capmod.gms(66926) 12 Mb
--- Reading solution for model XDUMMX
--- Executing after solve: elapsed 0:00:21.340
--- capmod.gms(66928) 13 Mb
--- GDXin=D:\temp1\data.gdx
--- capmod.gms(67021) 13 Mb
title CAPMOD:Report changes in prices
--- capmod.gms(67087) 13 Mb
title CAPMOD:Report changes in Production
--- capmod.gms(67147) 13 Mb
title CAPMOD:Report changes in levels
--- capmod.gms(67230) 13 Mb
title CAPMOD:Report changes in feed use
--- capmod.gms(67297) 13 Mb
title CAPMOD:Output to listing
--- capmod.gms(67352) 14 Mb
title CAPMOD:Generate tables in listing file
--- capmod.gms(67367) 14 Mb
--- Putfile SUCCESS D:\public\gocht\2018\trunk_ex_ante\gams\SUCCESS.txt
--- Putfile CAPLOG D:\public\gocht\2018\trunk_ex_ante\gams\caplog.txt
--- Putfile batch D:\temp1\CAPMODtitlebatch.bat
*** Status: Normal completion
--- Job capmod.gms Stop 06/06/18 18:00:34 elapsed 0:00:21.395
Close
Open Log
Summary only
Update
18:03
06.06.2018

gamside: D:\public\gocht\2018\trunk_ex_ante\gams\gasmideGMS.gpr

File Edit Search Windows Utilities Model Libraries Help

D:\public\gocht\2018\trunk_ex_ante\gams\capmod.lst

res_2_1230userScens_ts1.gdx | capmod.gms | capmod.lst

- Compilation
- Include File Summary
- Execution
- Display
  - rdYear
  - rdYear
  - p_fileExist
  - p_fileExist
  - v_ManureNPKintraTrade
  - v_ManureNPKintraTrade
  - p_stepWeights
  - v_ManureNPKintraTrade
  - v_ManureNPKintraTrade
- Equation Listing SOLVE m_capModQ Using
- Equation
  - LINEAR_
  - OBJEQF_
  - SUPBAL_
  - INPANI_
  - REQSE_
  - REQSN_
  - MAXSHR_
  - MINSHR_
  - FEDUSE_
  - NUTNED_
  - NUTMIN_
  - fertDistExcr_
  - fertDistMine_
  - fertDistCres_
  - ManureNPK_
  - GRPLevl_
  - QUADRA_
  - SETA_
  - SETAN_
  - MXSETA_
  - NONF_
  - sumEntl_
  - overShotEntl_
  - greenOverShot_
  - fixTechfShares_
  - nGrpLevl_
  - nMax_
  - LsDensMax_
  - SalesSugb_
  - SlGMSugb_
  - cdfSugb_
  - pdfSugb_
  - SugbRev_
  - netPutQuantSugb_
  - winterCover_
  - ecoSetAside_
  - cropDivGreening_
  - QUADRF_
  - QUADRF1_
  - LandMarket_
  - LandBal_
  - labCap_
  - e_uaar
  - e_asym
  - e_landSupCost
  - permGrasGreening_
- Column Listing SOLVE m_capModQ Using
- Column

```
DK000000.DPNATCO.DDNATCO          .            30.1891        +INF            EPS

                            LOWER          LEVEL          UPPER         MARGINAL

---- VAR v_obje             -INF      1.6054276E+7        +INF             .

  v_obje  Objective value

---- VAR v_actLevl  Level of production activities in 1000 ha or 1000 heads

                          LOWER          LEVEL          UPPER         MARGINAL

DK000000.SWHE.T1        28.2882       429.0087      2828.8171          .
DK000000.SWHE.T2        28.2882       351.9066      2828.8171          .
DK000000.RYEM.T1         5.8000        58.7798       580.0028          .
DK000000.RYEM.T2         5.8000        59.0638       580.0028         EPS
DK000000.BARL.T1        31.1755       228.3276      3117.5544          .
DK000000.BARL.T2        31.1755       228.3276      3117.5544   1.122658E-11
DK000000.OATS.T1         2.7320        31.5392       273.2005         EPS
DK000000.OATS.T2         2.7320        33.1519       273.2005         EPS
DK000000.MAIZ.T1         0.7760         6.1803       107.7603          .
DK000000.MAIZ.T2         0.7760         6.1803       107.7603         EPS
DK000000.OCER.T1         0.9012        10.2494       109.0125         EPS
DK000000.OCER.T2         0.9012        10.2494       109.0125         EPS
DK000000.RAPE.T1         6.9417        72.1025       694.1741         EPS
DK000000.RAPE.T2         6.9417        72.1025       694.1741          .
DK000000.MAIF.T1        12.7355       131.4082      1273.5476   -9.37064E-11
DK000000.MAIF.T2        12.7355       132.6244      1273.5476          .
DK000000.ROOF.T1         0.2454         3.0396       102.4535         EPS
DK000000.ROOF.T2         0.2454         3.1811       102.4535          .
DK000000.OFAR.T1        16.1316       142.8952      1613.1607   -5.91456E-11
DK000000.OFAR.T2        16.1316       140.8321      1613.1607   -3.54987E-11
DK000000.GRAE.T         13.5450       134.9535      1354.4959          .
DK000000.GRAI.T         13.5450       135.9456      1354.4959          .
DK000000.POTA.T1         1.4488        14.4687       144.8798         EPS
DK000000.POTA.T2         1.4488        14.4687       144.8798         EPS
DK000000.SUGB.T1         2.2017        21.3291       220.1723         EPS
DK000000.SUGB.T2         2.2017        21.3291       220.1723         EPS
DK000000.TEXT.T1         0.0790         0.9356       100.7903         EPS
DK000000.TEXT.T2         0.0790         0.9356       100.7903         EPS
DK000000.TOMA.T1         0.0014         0.0141       100.0141         EPS
DK000000.TOMA.T2         0.0014         0.0141       100.0141         EPS
DK000000.OVEG.T1         0.5346         5.3755       105.3458         EPS
DK000000.OVEG.T2         0.5346         5.3755       105.3458         EPS
DK000000.APPL.T1         0.0831         0.8307       100.8315         EPS
DK000000.APPL.T2         0.0831         0.8307       100.8315         EPS
DK000000.OFRU.T1         0.2212         2.2049       102.2123         EPS
DK000000.OFRU.T2         0.2212         2.2049       102.2123         EPS
DK000000.FALL.T1         6.8145        62.8169       681.4460          .
DK000000.VSET.T1   1.0000000E-6        29.3601    100000.0000         EPS
DK000000.VSET.T2   1.0000000E-6        29.3601    100000.0000         EPS
DK000000.DCOL.T         27.6716       276.5304      2767.1601          .
```

71602: 1

No active process

capmod

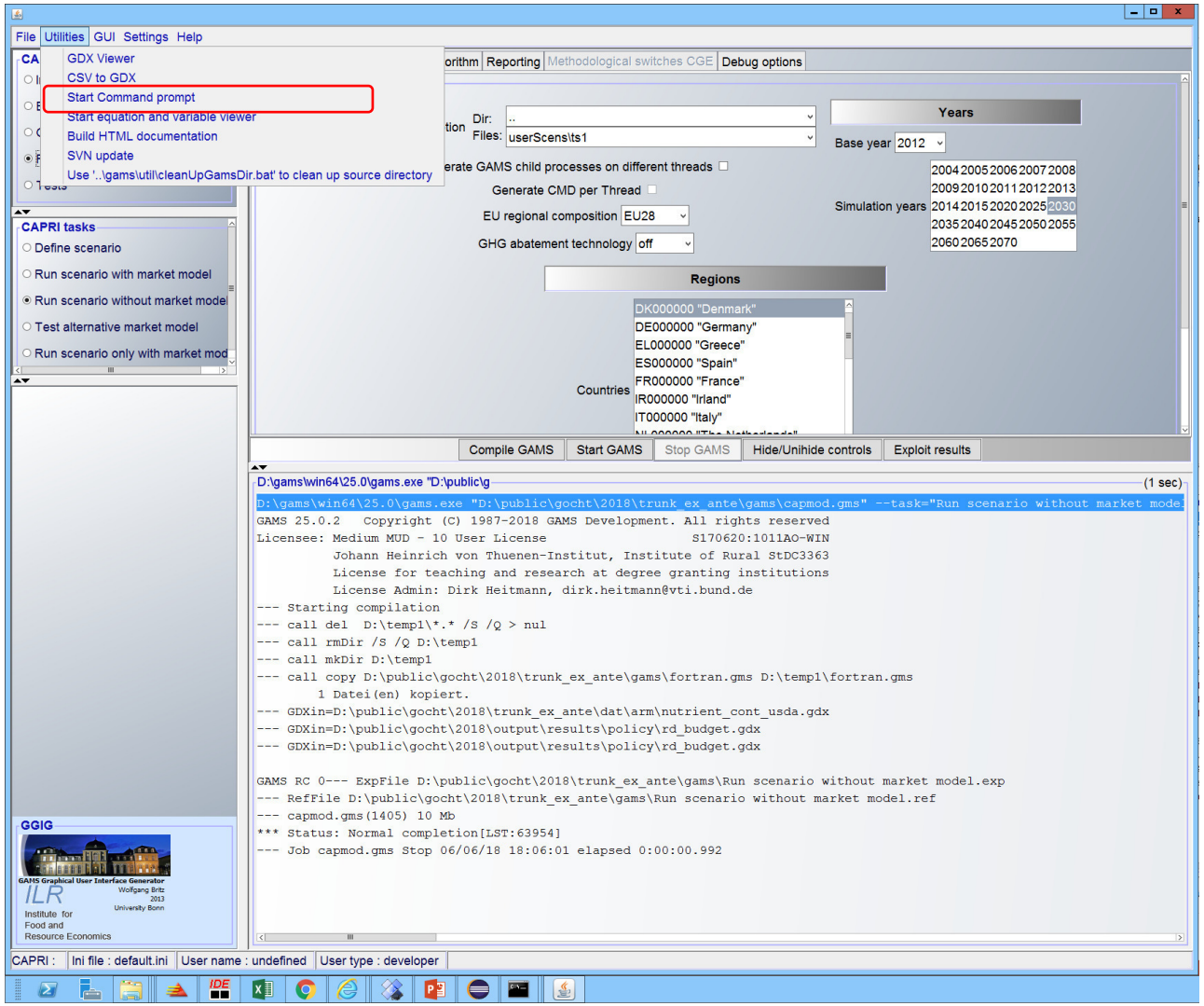
```
CONOPT 3         25.0.2 r65346 Released Jan 31, 2018 WEI x86 64bit/MS Windows
--- Restarting execution
--- capmod.gms(66595) 12 Mb
--- Reading solution for model XDUMMX
--- Executing after solve: elapsed 0:00:21.087
--- capmod.gms(66665) 14 Mb
--- GDXin=D:\temp1\policy.gdx
--- capmod.gms(66689) 14 Mb
title CAPMOD:Post model reporting: Store policy data
--- capmod.gms(66759) 14 Mb
title CAPMOD:Temporarily remove policy data
--- capmod.gms(66765) 14 Mb
--- GDX File D:\temp1\policy.gdx
--- capmod.gms(66817) 14 Mb
title CAPMOD:Post model reporting: Mitigation details
--- capmod.gms(66866) 14 Mb
title CAPMOD:Post model reporting: Load results from yield decomposition
--- capmod.gms(66871) 14 Mb
--- GDXin=D:\temp1\from_yield_change_decomp.gdx
--- capmod.gms(66900) 14 Mb
--- GDX File D:\public\gocht\2018\output\results\capmod\res_2_1230userScens_ts1.gdx
--- capmod.gms(66902) 14 Mb
--- Generating CNS model XDUMMX
--- capmod.gms(66926) 17 Mb
---    0 rows  0 columns  0 non-zeroes
---    0 nl-code  0 nl-non-zeroes
--- capmod.gms(66926) 14 Mb
--- Executing CONOPT: elapsed 0:00:21.181
CONOPT 3         25.0.2 r65346 Released Jan 31, 2018 WEI x86 64bit/MS Windows
--- Restarting execution
--- capmod.gms(66926) 12 Mb
--- Reading solution for model XDUMMX
--- Executing after solve: elapsed 0:00:21.340
--- capmod.gms(66928) 13 Mb
--- GDXin=D:\temp1\data.gdx
--- capmod.gms(67021) 13 Mb
title CAPMOD:Report changes in prices
--- capmod.gms(67087) 13 Mb
title CAPMOD:Report changes in Production
--- capmod.gms(67147) 13 Mb
title CAPMOD:Report changes in levels
--- capmod.gms(67230) 13 Mb
title CAPMOD:Report changes in feed use
--- capmod.gms(67297) 13 Mb
title CAPMOD:Output to listing
--- capmod.gms(67352) 14 Mb
title CAPMOD:Generate tables in listing file
--- capmod.gms(67367) 14 Mb
--- Putfile SUCCESS D:\public\gocht\2018\trunk_ex_ante\gams\SUCCESS.txt
--- Putfile CAPLOG D:\public\gocht\2018\trunk_ex_ante\gams\caplog.txt
--- Putfile batch D:\temp1\CAPMODtitlebatch.bat
*** Status: Normal completion
--- Job capmod.gms Stop 06/06/18 18:00:34 elapsed 0:00:21.395
```

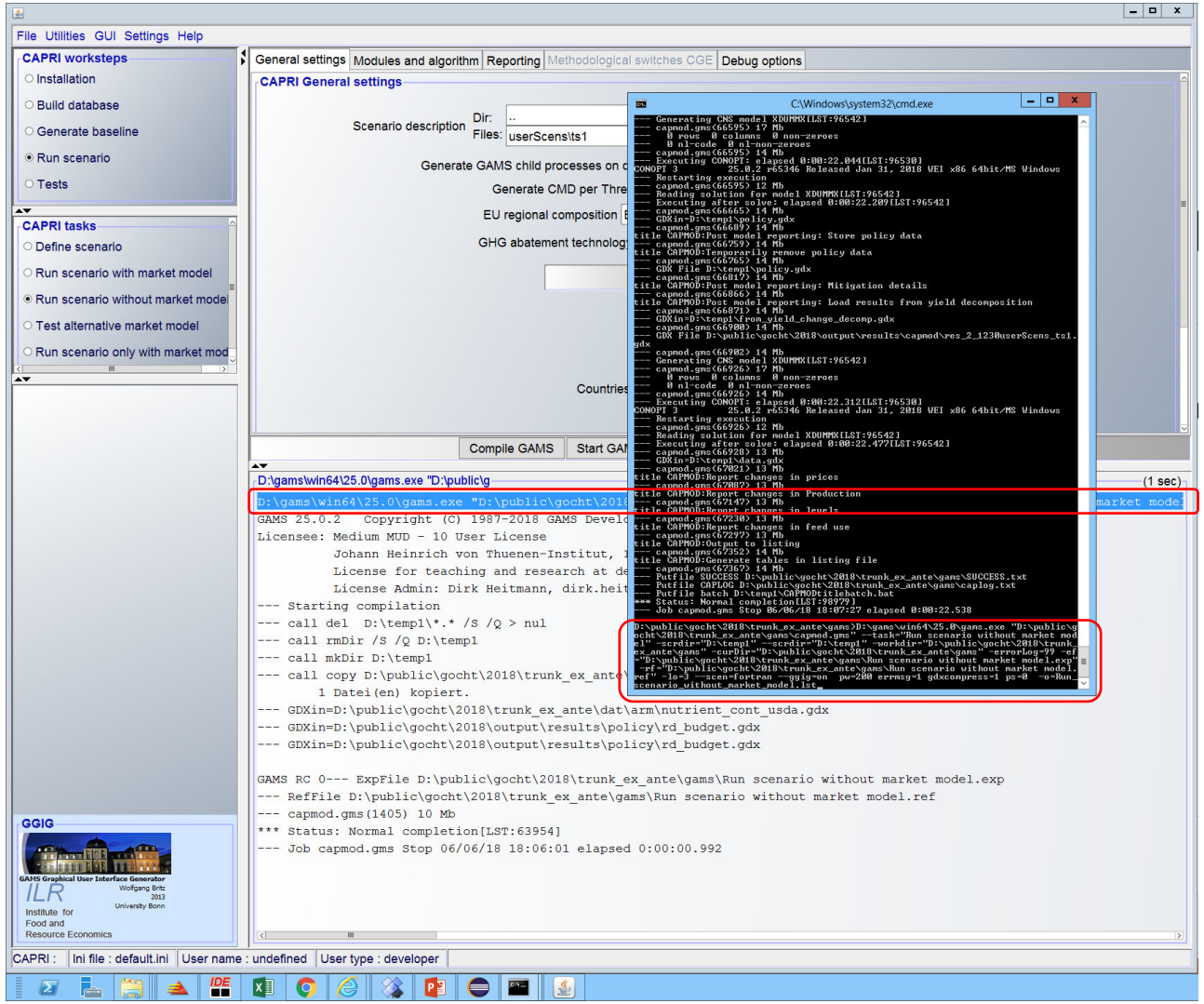
Close | Open Log | Summary only | Update

18:04
06.06.2018

Exercise 1d: CMD call

1. Open cmd
2. Generate include file from CAPRI GUI
3. Copy command line string into cmd
4. Run


File Utilities GUI Settings Help
GDX Viewer
CSV to GDX
Start Command prompt
Start equation and variable viewer
Build HTML documentation
SVN update
Use '..\gams\util\cleanUpGamsDir.bat' to clean up source directory
orithm Reporting Methodological switches CGE Debug options
Dir: ..
Files: userScens\ts1
Years
Base year 2012
erate GAMS child processes on different threads
Generate CMD per Thread
EU regional composition EU28
GHG abatement technology off
Simulation years
2004 2005 2006 2007 2008
2009 2010 2011 2012 2013
2014 2015 2020 2025 2030
2035 2040 2045 2050 2055
2060 2065 2070
Regions
Countries
DK000000 "Denmark"
DE000000 "Germany"
EL000000 "Greece"
ES000000 "Spain"
FR000000 "France"
IR000000 "Irland"
IT000000 "Italy"
CAPRI tasks
Define scenario
Run scenario with market model
Run scenario without market model
Test alternative market model
Run scenario only with market model
Compile GAMS
Start GAMS
Stop GAMS
Hide/Unihide controls
Exploit results
D:\gams\win64\25.0\gams.exe "D:\public\g
(1 sec)
D:\gams\win64\25.0\gams.exe "D:\public\gocht\2018\trunk_ex_ante\gams\capmod.gms" --task="Run scenario without market model
GAMS 25.0.2 Copyright (C) 1987-2018 GAMS Development. All rights reserved
Licensee: Medium MUD - 10 User License S170620:1011AO-WIN
Johann Heinrich von Thuenen-Institut, Institute of Rural StDC3363
License for teaching and research at degree granting institutions
License Admin: Dirk Heitmann, dirk.heitmann@vti.bund.de
--- Starting compilation
--- call del D:\temp1*.* /S /Q > nul
--- call rmDir /S /Q D:\temp1
--- call mkDir D:\temp1
--- call copy D:\public\gocht\2018\trunk_ex_ante\gams\fortran.gms D:\temp1\fortran.gms
1 Datei(en) kopiert.
--- GDXin=D:\public\gocht\2018\trunk_ex_ante\dat\arm\nutrient_cont_usda.gdx
--- GDXin=D:\public\gocht\2018\output\results\policy\rd_budget.gdx
--- GDXin=D:\public\gocht\2018\output\results\policy\rd_budget.gdx
GAMS RC 0--- ExpFile D:\public\gocht\2018\trunk_ex_ante\gams\Run scenario without market model.exp
--- RefFile D:\public\gocht\2018\trunk_ex_ante\gams\Run scenario without market model.ref
--- capmod.gms(1405) 10 Mb
*** Status: Normal completion[LST:63954]
--- Job capmod.gms Stop 06/06/18 18:06:01 elapsed 0:00:00.992
GGIG
GAMS Graphical User Interface Generator
Wolfgang Britz
2013
University Bonn
ILR
Institute for
Food and
Resource Economics
CAPRI :
Ini file : default.ini
User name : undefined
User type : developer


File Utilities GUI Settings Help
CAPRI worksteps
Installation
Build database
Generate baseline
Run scenario
Tests
CAPRI tasks
Define scenario
Run scenario with market model
Run scenario without market model
Test alternative market model
Run scenario only with market model
GGIG
GAMS Graphical User Interface Generator
Wolfgang Britz
2013
University Bonn
ILR
Institute for
Food and
Resource Economics
General settings
Modules and algorithm
Reporting
Methodological switches CGE
Debug options
CAPRI General settings
Scenario description
Dir:
Files:
userScens\ts1
Generate GAMS child processes on c
Generate CMD per Thre
EU regional composition
GHG abatement technolog
Countries
Compile GAMS
Start GAM
C:\Windows\system32\cmd.exe
D:\gams\win64\25.0\gams.exe "D:\public\g
(1 sec)
GAMS 25.0.2 Copyright (C) 1987-2018 GAMS Develo
Licensee: Medium MUD - 10 User License
Johann Heinrich von Thuenen-Institut,
License for teaching and research at de
License Admin: Dirk Heitmann, dirk.heit
--- Starting compilation
--- call del D:\temp1*.* /S /Q > nul
--- call rmDir /S /Q D:\temp1
--- call mkDir D:\temp1
--- call copy D:\public\gocht\2018\trunk_ex_ante\
1 Datei(en) kopiert.
--- GDXin=D:\public\gocht\2018\trunk_ex_ante\dat\arm\nutrient_cont_usda.gdx
--- GDXin=D:\public\gocht\2018\output\results\policy\rd_budget.gdx
--- GDXin=D:\public\gocht\2018\output\results\policy\rd_budget.gdx
GAMS RC 0--- ExpFile D:\public\gocht\2018\trunk_ex_ante\gams\Run scenario without market model.exp
--- RefFile D:\public\gocht\2018\trunk_ex_ante\gams\Run scenario without market model.ref
--- capmod.gms(1405) 10 Mb
*** Status: Normal completion[LST:63954]
--- Job capmod.gms Stop 06/06/18 18:06:01 elapsed 0:00:00.992
CAPRI :
Ini file : default.ini
User name : undefined
User type : developer

3. The CAPRI listing, the GGIG include file and Command line options

The include file

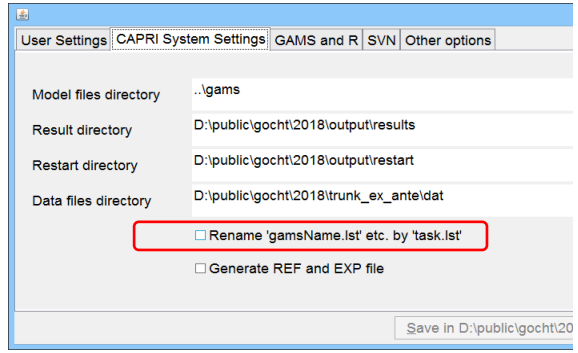
- GGIG GUI converts all options (controls) from the GUI in GAMS readable sets and setglobals, parameters …
- Each task has one include file
- Include File is generated at compile time
- @all: inspect the include file

Command line parameter in CAPRI (capmod.gms)

- --task="Run scenario without market model"
- -scrdir="D:\temp1"
- --scrdir="D:\temp1"
- -workdir="D:\public\gocht\2018\trunk_ex_ante\gams"
- -curDir="D:\public\gocht\2018\trunk_ex_ante\gams"
- -a=c
- -errorLog=99
- -ef="D:\public\gocht\2018\trunk_ex_ante\gams\Run scenario without market model.exp"
- -rf="D:\public\gocht\2018\trunk_ex_ante\gams\Run scenario without market model.ref"
- -lo=3
- --scen=fortran
- --ggig=on
- pw=200
- errmsg=1
- gdxcompress=1
- ps=0
- -o=Run_scenario_without_market_model.lst

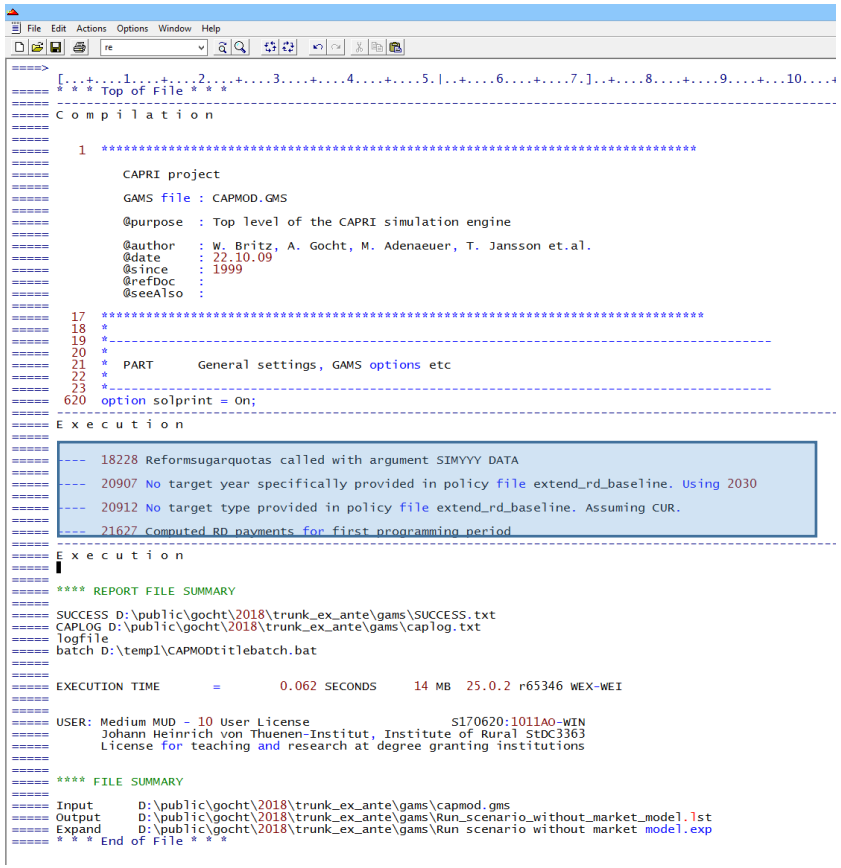
The CAPRI Listing File

- The output file of a GAMS run or compile is called *listing file*.
- compile time and execution -> generates lst
- Capmod.lst or when option -> Run_Scenario_without_market_model.lst
- Option for formatting the listing file
  - errmsg 1 (directly behind the error code a description is given)
  - PC 0-3: padding, Fortran style, stream, no formfeed, formfeed (standard CAPRI) GAMS Version
  - gdxcompress=1 (reduce the gdx file size by 40%)
- Set option in gmsprmNT.txt or pass as argument in GAMS Dir



Structure of the .lst file in capmod

- Compilation
  - echo print of the input file(s), possibly error messages
- Execution
  - display statements and possibly execution error messages
  - Model Generation
    - output during model generation
    - listings of equations and variable listings as well as model statistics and possibly generation execution error messages.
  - Solution
    - solution report including the solve summary, the solver report, the solution listing and the report summary
- Post-Solution.
  - final execution summary
  - file summary



- Execution
  - Model Generation
    - output during model generation
    - listings of equations and variable listings as well as model statistics and possibly generation execution error messages.
  - Solution
    - solution report including the solve summary
    - the solver report, the solution listing
    - report summary

```
File  Edit  Actions  Options  Window  Help
re
====>
     [...+....1....+....2....+....3....+....4....+....5.|..+....6....+....7.]..+....8....+....9....+...10....+...11....+...12...
=====  * * *  Top of File  * * *
=====
=====  E x e c u t i o n
=====
=====  Equation Listing     SOLVE m_capModQ Using NLP From line 57487
=====
=====  ---- LINEAR_  =E=  Linear costs and revenues
=====
=====  LINEAR_(DK000000)..  200.6897336976*v_overShotEntl(DK000000,dp_bps,DD_bps) + 6.20104424669896*v_overShotEntl(DK000000,DPYOUN
=====
=====       + 1272.35598812231*v_actLevl(DK000000,SWHE,T1) + 598.132620031921*v_actLevl(DK000000,SWHE,T2) + 1158.46468974227*v_ac
=====
=====  Column Listing       SOLVE m_capModQ Using NLP From line 57487
=====
=====  ---- v_overShotEntl  Overshoting of entitlements (= maximum hectares/heads etc. eligible for premiums
=====
=====  v_overShotEntl(DK000000,dp_bps,DD_bps)
=====                  (.LO, .L, .UP, .M = 0, 0, +INF, 0)
=====        200.6897   LINEAR_(DK000000)
=====            1      overShotEntl_(DK000000,dp_bps,DD_bps)
=====
=====  v_overShotEntl(DK000000,DPYOUNG,DDYOUNG)
=====                  (.LO, .L, .UP, .M = 0, 0, +INF, 0)
=====          6.201   LINEAR_(DK000000)
=====
=====  Model Statistics     SOLVE m_capModQ Using NLP From line 57487
=====
=====  LOOPS                                  step   S1
=====                                           RU   DK000000
=====
=====  MODEL STATISTICS
=====
=====  BLOCKS OF EQUATIONS          46     SINGLE EQUATIONS          460
=====  BLOCKS OF VARIABLES          19     SINGLE VARIABLES          495
=====  NON ZERO ELEMENTS         2,842     NON LINEAR N-Z            647
=====  DERIVATIVE POOL              20     CONSTANT POOL             435
=====  CODE LENGTH               2,346
=====
=====  GENERATION TIME      =        0.062 SECONDS     13 MB  25.0.2 r65346 WEX-WEI
=====               L O O P S               step S1
=====                                          RU DK000000
=====
=====  Solution Report      SOLVE m_capModQ Using NLP From line 57487
=====
=====
=====                  S O L V E      S U M M A R Y
=====
=====       MODEL   m_capModQ           OBJECTIVE  v_obje
=====       TYPE    NLP                 DIRECTION  MAXIMIZE
=====       SOLVER  CONOPT              FROM LINE  57487
=====
=====  **** SOLVER STATUS     1 Normal Completion
=====  **** MODEL STATUS      2 Locally Optimal
=====  **** OBJECTIVE VALUE          16054276.3678
=====
=====   RESOURCE USAGE, LIMIT          0.391        60.000
=====   ITERATION COUNT, LIMIT       214        10000
=====   EVALUATION ERRORS              0            0
=====  CONOPT 3       25.0.2 r65346 Released Jan 31, 2018 WEI x86 64bit/MS Windows
=====  Reading parameter(s) from "D:\public\gocht\2018\trunk_ex_ante\gams\conopt.opt"
=====
=====      C O N O P T 3   version 3.17G
=====      Copyright (C)   ARKI Consulting and Development A/S
=====                      Bagsvaerdvej 246 A
=====                      DK-2880 Bagsvaerd, Denmark
=====
=====      The model has 495 variables and 460 constraints
=====      with 2842 Jacobian elements, 647 of which are nonlinear.
=====      The Hessian of the Lagrangian has 237 elements on the diagonal,
=====      256 elements below the diagonal, and 255 nonlinear variables.
=====
=====                   Pre-triangular equations:   0
=====                   Post-triangular equations:  191
=====                   Definitional equations:     6
=====
=====   ** Optimal solution. Reduced gradient less than tolerance.
=====
=====  ---- EQU LINEAR_  Linear costs and revenues
=====
=====  ---- EQU OBJEQF_                .             .             .           1.0000
=====
=====  ---- EQU SUPBAL_  Supply balances for final outputs
=====
=====  ---- EQU INPANI_  Input balances for young animals regional
=====
=====  ---- EQU REQSE_  Requirements of animals written as equality
=====
=====  ---- EQU REQSN_  Requirements of animals written as in-equality
=====
=====  ---- EQU MAXSHR_  Maximum feed shares
=====
=====  ---- VAR v_labCap  Sum of PMP terms
=====
=====  ---- VAR v_fertDist  Distribution of organic and mineral N to groups of crops
=====
=====  ---- VAR v_ManureNPK  Total N,P,K at tail net of gaseous losses
=====
=====  ---- VAR v_nonfSlack  Slack which allows to turn non-food into a unequality
=====
=====  ---- VAR v_sumEntl  Sum of entitlements (= hectares/heads etc.) under a specific premium scheme
=====
=====  **** REPORT SUMMARY :        0     NONOPT
=====                               0 INFEASIBLE
=====                               0  UNBOUNDED
=====                               0     ERRORS
```

.lst summary of common actions

- Find errors
- View display and abort statements
- View solution listing
- Navigate during the iterations