```
    MLYMCT - MLYMC TABLE
    AIPH   - AGRICULTURAL INPUTS PER HECTARE (DOLLARS/
               HECTARE-YEAR)


  LOOP 3: LAND EROSION AND URBAN-INDUSTRIAL USE

ALL.K=ALLN*LLMY.K                                        112, A
ALLN=6000                                                112.1, C
    ALL    - AVERAGE LIFE OF LAND (YEARS)
    ALLN   - AVERAGE LIFE OF LAND NORMAL (YEARS)
    LLMY   - LAND LIFE MULTIPLIER FROM YIELD
               (DIMENSIONLESS)

LLMY.K=CLIP(LLMY2.K,LLMY1.K,TIME.K,PYEAR)                113, A
    LLMY   - LAND LIFE MULTIPLIER FROM YIELD
               (DIMENSIONLESS)
    CLIP   - A FUNCTION SWITCHED DURING THE RUN
    LLMY2  - LLMY, VALUE AFTER TIME=PYEAR
               (DIMENSIONLESS)
    LLMY1  - LLMY, VALUE BEFORE TIME=PYEAR
               (DIMENSIONLESS)
    TIME   - CURRENT TIME IN THE SIMULATION RUN
    PYEAR  - YEAR NEW POLICY IS IMPLEMENTED (YEAR)

LLMY1.K=TABHL(LLMY1T,LY.K/ILF,0,9,1)                     114, A
LLMY1T=1.2/1/.63/.36/.16/.055/.04/.025/.015/.01          114.1, T
    LLMY1  - LLMY, VALUE BEFORE TIME=PYEAR
               (DIMENSIONLESS)
    TABHL  - A FUNCTION WITH VALUES SPECIFIED BY A TABLE
    LLMY1T - LLMY1 TABLE
    LY     - LAND YIELD (VEGETABLE-EQUIVALENT KILOGRAMS/
               HECTARE-YEAR)
    ILF    - INHERENT LAND FERTILITY (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR)
LLMY2.K=TABHL(LLMY2T,LY.K/ILF,0,9,1)                     115, A
LLMY2T=1.2/1/.63/.36/.16/.055/.04/.025/.015/.01          115.1, T
    LLMY2  - LLMY, VALUE AFTER TIME=PYEAR
               (DIMENSIONLESS)
    TABHL  - A FUNCTION WITH VALUES SPECIFIED BY A TABLE
    LLMY2T - LLMY2 TABLE
    LY     - LAND YIELD (VEGETABLE-EQUIVALENT KILOGRAMS/
               HECTARE-YEAR)
    ILF    - INHERENT LAND FERTILITY (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR)

LER.KL=AL.K/ALL.K                                        116, R
    LER    - LAND EROSION RATE (HECTARES/YEAR)
    AL     - ARABLE LAND (HECTARES)
    ALL    - AVERAGE LIFE OF LAND (YEARS)

UILPC.K=TABHL(UILPCT,IOPC.K,0,1600,200)                  117, A
UILPCT=.005/.008/.015/.025/.04/.055/.07/.00/.09          117.1, T
    UILPC  - URBAN-INDUSTRIAL LAND PER CAPITA (HECTARES/
               PERSON)
    TABHL  - A FUNCTION WITH VALUES SPECIFIED BY A TABLE
    UILPCT - UILPC TABLE
    IOPC   - INDUSTRIAL OUTPUT PER CAPITA (DOLLARS/
               PERSON-YEAR)


UILR.K=UILPC.K*POP.K                                     118, A
    UILR   - URBAN-INDUSTRIAL LAND REQUIRED (HECTARES)
    UILPC  - URBAN-INDUSTRIAL LAND PER CAPITA (HECTARES/
               PERSON)
    POP    - POPULATION (PERSONS)

LRUI.KL=MAX(0,(UILR.K-UIL.K)/UILDT)                      119, R
UILDT=10                                                 119.1, C
    LRUI   - LAND REMOVAL FOR URBAN-INDUSTRIAL USE
               (HECTARES/YEAR)
    UILR   - URBAN-INDUSTRIAL LAND REQUIRED (HECTARES)
    UIL    - URBAN-INDUSTRIAL LAND (HECTARES)
    UILDT  - URBAN-INDUSTRIAL LAND DEVELOPMENT TIME
               (YEARS)

UIL.K=UIL.J+(DT)(LRUI.JK)                                120, L
UIL=UILI                                                 120.1, N
UILI=8.2E6                                               120.2, C
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    UIL    - URBAN-INDUSTRIAL LAND (HECTARES)
    DT     - TIME INTERVAL BETWEEN CONSECUTIVE
               CALCULATIONS (YEARS)
    LRUI   - LAND REMOVAL FOR URBAN-INDUSTRIAL USE
               (HECTARES/YEAR)
    UILI   - URBAN-INDUSTRIAL LAND INITIAL (HECTARES)

  LOOP 4: LAND FERTILITY DEGRADATION

LFERT.K=LFERT.J+(DT)(LFR.JK-LFD.JK)                      121, L
LFERT=LFERTI                                             121.1, N
LFERTI=600                                               121.2, C
    LFERT  - LAND FERTILITY (VEGETABLE-EQUIVALENT
               KILOGRAMS/HECTARE-YEAR)
    DT     - TIME INTERVAL BETWEEN CONSECUTIVE
               CALCULATIONS (YEARS)
    LFR    - LAND FERTILITY REGENERATION (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR-YEAR)
    LFD    - LAND FERTILITY DEGRADATION (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR-YEAR)
    LFERTI - LAND FERTILITY INITIAL (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR)

LFDR.K=TABHL(LFDRT,PPOLX.K,0,30,10)                      122, A
LFDRT=0/.1/.3/.5                                         122.1, T
    LFDR   - LAND FERTILITY DEGRADATION RATE (1/YEAR)
    TABHL  - A FUNCTION WITH VALUES SPECIFIED BY A TABLE
    LFDRT  - LFDR TABLE
    PPOLX  - INDEX OF PERSISTENT POLLUTION
               (DIMENSIONLESS)

LFD.KL=LFERT.K*LFDR.K                                    123, R
    LFD    - LAND FERTILITY DEGRADATION (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR-YEAR)
    LFERT  - LAND FERTILITY (VEGETABLE-EQUIVALENT
               KILOGRAMS/HECTARE-YEAR)
    LFDR   - LAND FERTILITY DEGRADATION RATE (1/YEAR)


  LOOP 5: LAND FERTILITY REGENERATION

LFR.KL=(ILF-LFERT.K)/LFRT.K                              124, R
ILF=600                                                  124.1, C
    LFR    - LAND FERTILITY REGENERATION (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR-YEAR)
    ILF    - INHERENT LAND FERTILITY (VEGETABLE-
               EQUIVALENT KILOGRAMS/HECTARE-YEAR)
    LFERT  - LAND FERTILITY (VEGETABLE-EQUIVALENT
               KILOGRAMS/HECTARE-YEAR)
    LFRT   - LAND FERTILITY REGENERATION TIME (YEARS)

LFRT.K=TABHL(LFRTT,FALM.K,0,.10,.02)                     125, A
LFRTT=20/13/8/4/2/2                                      125.1, T
    LFRT   - LAND FERTILITY REGENERATION TIME (YEARS)
    TABHL  - A FUNCTION WITH VALUES SPECIFIED BY A TABLE
    LFRTT  - LFRT TABLE
    FALM   - FRACTION OF INPUTS ALLOCATED TO LAND
               MAINTENANCE (DIMENSIONLESS)

  LOOP 6: DISCONTINUING LAND MAINTENANCE

FALM.K=TABHL(FALMT,PFR.K,0,4,1)                          126, A
FALMT=0/.04/.07/.09/.1                                   126.1, T
    FALM   - FRACTION OF INPUTS ALLOCATED TO LAND
               MAINTENANCE (DIMENSIONLESS)
    TABHL  - A FUNCTION WITH VALUES SPECIFIED BY A TABLE
    FALMT  - FALM TABLE
    PFR    - PERCEIVED FOOD RATIO (DIMENSIONLESS)

FR.K=FPC.K/SFPC                                          127, A
SFPC=230                                                 127.1, C
    FR     - FOOD RATIO (DIMENSIONLESS)
    FPC    - FOOD PER CAPITA (VEGETABLE-EQUIVALENT
               KILOGRAMS/PERSON-YEAR)
    SFPC   - SUBSISTENCE FOOD PER CAPITA (VEGETABLE-
               EQUIVALENT KILOGRAMS/PERSON-YEAR)

PFR.K=SMOOTH(FR.K,FSPD)                                  128, A
PFR=1                                                    128.1, N
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