

LPIS activities for OTSC inspectors

ending that splendid isolation

www.jrc.ec.europa.eu

Serving society
Stimulating innovation
Supporting legislation



Outline

- Skillset
- Reference parcels issues
- Visual inspection
- Report potential troubled RP
- Processing

Skillset 1

Properties of a reference parcel

(>< agricultural parcel)

By LPIS custodian
presumed stable
identifiable unit
boundaries in GIS
agricultural potential ($MEA = f(\text{land cover})$)
reference (\approx validated) MEA

By OTSC inspector
seasonal
referenced crop group
alphanumeric
agricultural (land) use
declared (=intentional)

The RP properties are implemented in national LPIS specifications

LPIS specs should be known + understood by the OTSC inspector

Skillset 2

LPIS QA provides a common inspection methodology for LPIS RP.

the OTSC inspector should know + understand the:

1. local eligibility profile = legend/photointerpretation key of all land cover types, potentially considered agricultural/eligible
2. non-conforming reference parcels
 - area non-conforming
 - contaminated
 - applicable critically defect
3. mapping/photointerpretation rules for RP delineation / inspection

LPIS QA

Eligibility profile

= photointerpretation key

Inventory of the land forms
considered by each MS

Local name/code

LCCcode \equiv EU mapping key!

eligibility: 100% / 0% / pro-rata

Pro-rata

1. mixture of eligible and ineligible components, not individually delineable (spatial/temporal), in a particular land form/habitat.
2. identifiable and distinguishable
 - characteristic (physiognomic-structural) components
 - specific local context
 - known and stable proportions
 - result of a typical agricultural practice

Italian code	Land Cover Class	Land cover Class Definition	Minimum Mapping Legend	User-defined Legend Code	LCCCode	Eligible Hectar factor (percentage of the area)
666	Arable Land (general)	Continuous Field(s) Of Herbaceous Crop(s) .	Arable land	A	10099	100%
666	Arable Land (rainfed with fallow system)	Herbaceous Crop(s) ., With Fallow System	Arable land	A	10660	100%
666	Arable Land (temporary resting)	Shifting Cultivation Of Herbaceous Crop(s)	Natural Grassland	A	10224	100%
655	Agriculture with Cultivated Trees (intercropping)	Rainfed Herbaceous Crop(s) / Permanently Cropped Area With Rainfed Tree Crop(s)	n/a	A	10222 / 11492	100%
638	Permanent pasture (self-seed)	Closed Medium To Tall Grassland, Single Layer	Natural Grassland	N	20439-12763-	100%
666	Permanent pasture (sown)	Permanently Cropped Area Graminoid Crop(s) Dominant Crop: Fodder - Fodder grasses	Grassland	G	10822-S0701	100%
659	Permanent pasture (self-seed with shrubs, roks or trees up to 20% of the area)	rocks up to 20% of the area, independent from altitude.	n/a	PT1	ZAGE1	80%
654	Permanent pasture (self-seed with shrubs, roks or trees up to 50% of the area)	rocks up to 50% of the area, independent from altitude.	n/a	PT2	ZAGE2	50%
500	10 March 2014 Permanent crops (plantation)	Permanently Cropped Area With Rainfed Tree Crop(s); Crop Cover: Plantation(s)	Permanent Tree crop	T	10153-W7	100%

Centre



LPIS QA

Area non conforming reference parcels

Where the observed land cover area \neq reference area _____:

- > 7% for reference area < 0.2 ha
- > 5% for 0.2 ha < reference area < 0.5 ha
- > 3% for 0.5 ha < reference area

But:

RP land cover potential eligibility \neq OTSC eligible land use of AP
 $\text{Area}_{\text{observed}} \neq \text{Area}_{\text{determined}}$

So, only applicable when :

- ineligible features are permanent
- the $\text{Area}_{\text{measured}} \equiv \text{Area}_{\text{observed}}$ (=reference area)

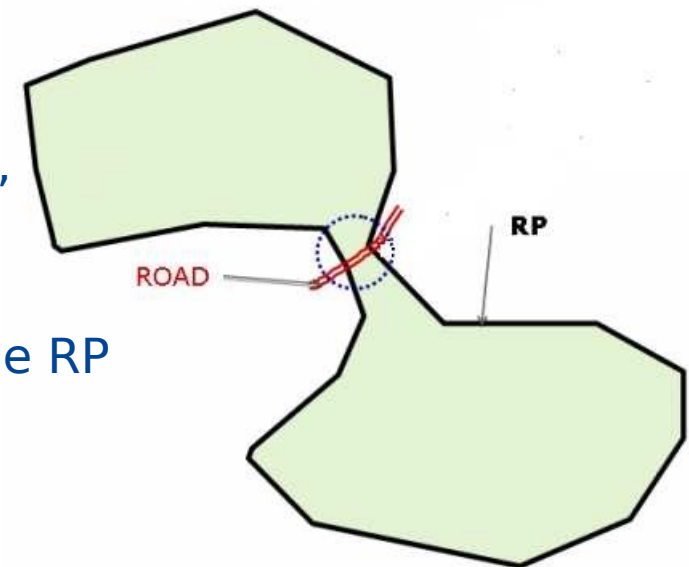
If confirmed, report RP(s) to LPIS custodian!

LPIS QA

Contaminated parcels

Parcels where area_{observed} falls within the 7%/5%/3% threshold, but contain inside the perimeter non-agricultural land cover features:

1. unaccounted for (by lack of internal LPIS evidence)
2. AND
either
are artificial sealed surfaces (= roads, buildings, processing facilities)
or
create a permanent discontinuity in the RP entity



When detected, report RP to LPIS custodian!

10 March 2014

LPIS QA

Critical defects

Any RP that fails to uniquely identify the agricultural parcel or to quantify the agricultural land for crosscheck

6 types based on the nature of a confirmed failure, RP type dependent

http://marswiki.jrc.ec.europa.eu/wikicap/index.php/LPISQA_3.c.iii_Critical_defects

- | | |
|---------------------------------------|------------------------------------|
| 1. Total absence of eligible features | no agriculture at all |
| 2. Invalid RP perimeter | zero real world (rw) border points |
| 3. Invalid common RP boundaries | no rw borders with 2 neighbours |
| 4. Incomplete block: | no rw border with outside world |
| 5. Multi-polygon | no single RP perimeter |
| 6. Multi-parcel | aggregate of > single 10 RP |

When detected, report RP to LPIS custodian!

10 March 2014

S

RP visual inspection

1. Is the perimeter obvious nonsense on the orthoimage?
2. Is a part of the perimeter invisible on the orthoimage?
----- if either is “yes”, visual inspection is not feasible ----
3. Has any of the perimeter/border features been removed, changed or displaced ($> 5\text{m}$) on the new image?
4. Did a “new” building, road or artificial object appear?
5. Did agricultural features change inside or along the perimeter of the parcel, representing an estimated ground distance of 5 m or more?
6. Did the land cover migrate on the perimeter, excluding:
 - 1.any displacement due to image processing (max 1-2 pixels)
 - 2.any displacement due to the life cycle of vegetation (temporary/growth)
 - 3.any relief displacement of above ground and below ground features (“leaning” from viewing angle and feature height/depth)?

failed detection of RP contamination



10 March 2014

Joint
Research
Centre

Ignored giveaways:

- + road comes in one end, goes out another
- + evidenced misalignment of agricultural land
- + OTSC measurement identifies road



failed visual inspection of RP



- + Has any of the perimeter/border features been removed, changed or displaced (\Rightarrow 5m)?
- + Did agricultural features change inside the perimeter (\Rightarrow 5 m)?



10 March 2014

What to report to LPIS custodian?

Identification: (e.g. automatically generated sequential number)

Object :

- 1.identifier of the affected the reference parcel (RPID), which can be further detailed by explicit location.
- 2.a region of interest (several RP), with coordinates

Cause: the faulty process, if it can been established.

LPIS QA distinguishes update / upgrade / error / completeness / design

OTSC Observation(s) . The details on the observation, including:

- 1.author = OTSC inspector
- 2.observation dates
- 3.RP elements that are suspected non-conforming
4. comments

Status field for the LPIS process : “observed”



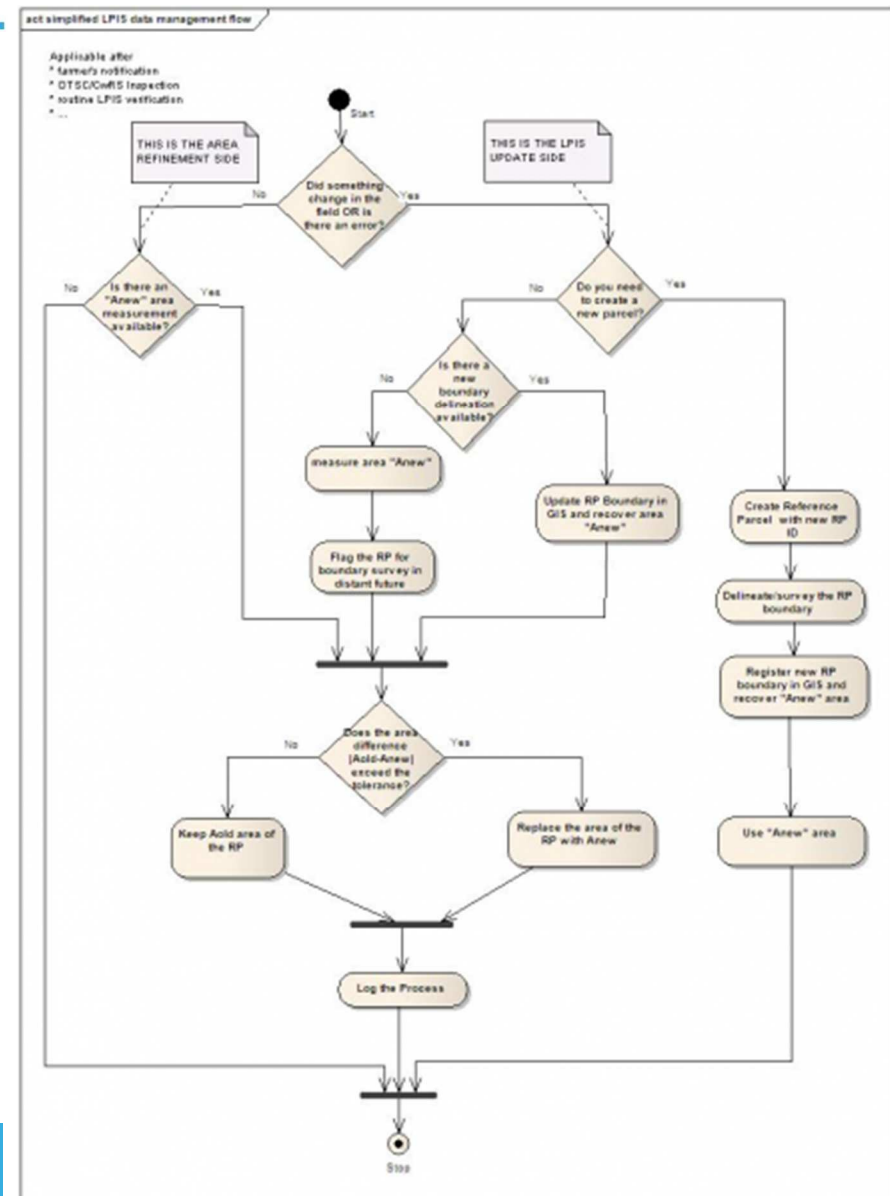
European
Commission

Further RP processing by LPIS custodian

First version 2007

http://marswiki.jrc.ec.europa.eu/wikicap/index.php/LPIS_dataflow

differentiates true update
from data improvement.
allows for a stability
threshold (\approx “tolerance”) for
area only observations
outline for adaptation in the
national processes



Conclusions

OTSC area measurement $> <$ reference area comparison
is not the only criterion!

ensure the OTSC inspector understands RP non-conformities
conform LPIS QA methodology

facilitate appropriate reporting of potential LPIS QA issues
conform LPIS upkeep guidance

Thank you!

