



## LIS Operational Protocol P08 v 3 – Impact Scoring and Community Classification

### 1.0 Purpose

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1.1 The purpose of this protocol is to outline the procedure for scoring and classifying the impact mines have on communities.

### 2.0 Overview

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2.1 Impact scoring has three main components. Firstly, impact scoring assists national strategic planning by identifying certain communities with high impact for mine action by government agencies and NGOs, targeting mine action to where it is needed most. Secondly, impact scoring has immediate real-time value when interviewers discover acute mine problems not known to mine action authorities. Thirdly, impact scoring and community classification provides a general assessment of the impact of landmines in a survey country, which mobilizes donor resources. Impact scoring uses the outputs of the community survey questionnaire to quantify landmine impact and classify communities according to this impact.

### 3.0 Responsibilities

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3.1 National authorities, in consultation with survey HQ, are responsible for approving the scoring system within the parameters of the weights budget. **[cf. 5.1.2]**

3.2 Field staff is responsible for scoring and classifying communities within five working days of a community visit.

3.3 In exceptional circumstances, the field team is responsible for recommending to survey HQ that adjustments be made to a specific community's impact score.

### 4.0 Definitions

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4.1 High Impact Community: Communities with impact scores of 11 and above.

4.2 Impact Score: A measure of how much a community is affected by mines, based on the presence of landmines/UXOs, the number of recent victims, and socio-economic blockage.

4.3 Low Impact Community: Communities with impact scores between one and five inclusive.

4.4 Medium Impact Community: Communities with impact scores between six and ten inclusive.

4.5 Score Weights: the relative importance of different socio-economic indicators in a target country. The sum of weights in the socio-economic portion of the scoring system must sum to ten.

4.6 Weights Budget: The total sum of weights for socio-economic blockage in the impact scoring system, set at ten.

## **5.0 Instructions**

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### **5.1 The Weights Budget**

5.1.1 The impact scoring system takes into account three categories: victims, blockages and types of contamination. The indicators and weights for victims and contamination types are fixed across all surveys: two points are added for each victim of mines or UXO in the last 24 months; a community gets two points for mine contamination and / or one point for UXO contamination. HQ staff will select blockage variables that specifically relate to the survey from the ten blockage indicators in the IMSMA field module, as well as the five user-defined variables. See P03 – Data Requirements for modifying blockage indicators to the specific characteristics of a country, subject to approval by the national authorities. **[cf. 6.1, P03 – Data Requirements]**

5.1.2 HQ staff will assist national authorities in setting weights for each blockage indicator included in the scoring system. The weights for ‘number of recent victims’, ‘presence of mines’ and ‘presence of UXOs’ must not be changed, and weights for ‘mine awareness’ and ‘old victims’ should be kept at 0 in IMSMA, as they are excluded from scoring. HQ staff will define a weight for each of the socioeconomic blockage variables: a weight of three indicates extreme impact, a weight of two indicates serious impact, and a weight of one indicates light impact. The total sum of weights should not be larger than 10. If variables are not included in the scoring, HQ staff should make sure their weights are set to zero in the IMSMA field module. Point values for the presence of mines / UXO and for recent victims are fixed for all surveys. A maximum point amount for socioeconomic blockage of ten is also set, but different variables and their relative weights can be adopted.

5.1.3 Once the country-specific scoring system is defined and tested, then the HQ staff will create a scoring sheet with the variables and their weights for the field teams, which should be introduced and explained to field staff during training.

### **5.2 Scoring and classifying communities in the field**

5.2.1 Field editors will fill out scoring sheets for communities based on the completed questionnaire. They will then classify communities into high, medium and low impact based on those scores, using the following table:

Score	Level of Impact
1-5	Low
6-10	Medium
11 and above	High

5.2.2 In exceptional circumstances, interviewers may recommend raising or lowering scores to their field editors if the score does not reflect the community's affects from landmines. The field editor, if he / she agrees, must put the case to the field supervisor, who then can make a recommendation to survey HQ. The team leader must sign off on this modification, which is limited to a 20% increase or a 20% decrease of the community's impact score, rounded down to the nearest whole number. This process must be well documented, and include a persuasive narrative that justifies the modification.

5.2.3 HQ staff will receive scoring sheets and classification from field staff, check it, and enter the data into IMSMA.

## **6.0 Rationale / Background**

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6.1 Including additional, user defined variables is usually good, and including new variables is generally less harmful than leaving out original variables. Additions should be uniform across a survey. The new variables added must be binary, according to the IMSMA format: they can only indicate presence or absence of a particular blockage.

The following is a full list of IMSMA-defined socioeconomic indicators:

- Access to some irrigated crop land is blocked
- Access to rain-fed cropland is blocked
- Access to some fixed pastureland is blocked
- Access to some migratory pastureland is blocked
- Access to some drinking water points is blocked
- Access to some water points for other uses is blocked
- Access to some non-cultivated area is blocked
- Access to some housing was blocked
- Some roads were blocked
- Access to some other infrastructure was blocked

**[cf. 5.1.1]**

6.2 For most variables, a 'weak-metric' approach is used: variables only indicate presence or absence, not the extent or specifics of the problem in a community. This is because comparisons on impact would become difficult within and between surveys if more specifics were added. Other variables may be relevant, though, such as area of contaminated rice paddies in Thailand and Cambodia, and the distance between

communities and their suspected hazard areas in Yemen. However, for the sake of consistency between surveys in different countries, a presence-absence approach is kept for all variables, except for ‘no. of recent victims’. **[cf. 5.1.1]**

6.3 Setting weights for different indicators is important because different countries, for cultural and economic reasons, may differ in the relative assessment of blockages. In Yemen, a great deal of weight was placed on blocked oases, but none at all on irrigated cropland, which doesn’t exist in Yemen. A weights budget is imposed to discourage impact inflation and to keep surveys broadly comparable. Weights express the perceived importance of a certain blockage averaged over different communities. The possible weights fall in a narrow band, from three (extreme impact) to zero (no impact). An indicator should be set to 0 if that particular blockage has little or no relevance to the community **[cf. P03 – data requirements]**. For example, ‘blocked access to migratory pastureland’ is set to 0 if there is no nomadic population. Such cases are excluded from the scoring sheet. **[cf. 5.1.3]**

6.4 Interviewers may recommend raising or lowering scores in special circumstances. For example, if 20 people riding in the same bus were blown up near a community a year ago, that would lead to a very high impact score. If the government cleared the road in question of antitank mines, then that high score should be decreased. In Chad, the blockage of tube-wells that are the sole source of livelihood for a particular community would be under-represented according to normal scoring. The procedure of local adjustment must be used rarely and in full consultation with all involved. **[cf. 6.2.2]**

6.5 Controversies about the LIS approach are usually based on relevancy, validity and reliability – relevancy by the different sectors of mine action, on validity by those exposed to particular country conditions, and on reliability by anybody who cares to go back and check survey claims. For a number of reasons (mines kill; survey legitimacy depends on solid data), when there seems to be a conflict among those values, SAC advocates greater reliability. This militates notably against building mined area surface or population into the impact score. These two are important items, but surveys may be able to collect information on them of very limited reliability only.

## **7.0 Materials**

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7.1 IMSMA (optional)

## **8.0 Attachments**

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*[NB: These are documents from different surveys, reports or old protocols that have been attached to this protocol in case they are found useful, interesting or relevant. They are purely optional reading.]*

8.1 Sample scoring sheet from Yemen

8.2 “Community Scoring, the Yemen Example”, by Aldo Benini (excerpted)

## **9.0 Related Protocols and Advisories**

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9.1 P04 – Field Organisation

9.2 P05 – Guidelines for Interviewers

## **10.0 References**

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10.1 P08 – Impact Scoring is included in objective 2.2-3 and objectives 7 and 8 in the Generic Timeline.

## **11.0 Revisions**

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11.1 Originally written by Aldo A. Benini, 00 11 21

11.2 Edited by Dann Naseemullah, 03 01 21

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**Attachments**

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**1. Yemen Scoring Sheet**

**Yemen Scoring Sheet**

there were mines.	If so, give	2points	_____
there was unexploded ordnance.	If so, give	1point	_____
Subtotal for explosives realm:			
access to some irrigated crop land was blocked.	If so, give	2points	_____
access to some rainfed crop land was blocked.	If so, give	1point	_____
access to some pasture was blocked.	If so, give	1point	_____
access to some drinking water points was blocked.	If so, give	1point	_____
access to some water points for other uses was blocked.	If so, give	1point	_____
access to some non-cultivated area was blocked.	If so, give	1point	_____
access to some housing area was blocked.	If so, give	1point	_____
some roads were blocked.	If so, give	1point	_____
access to some other infrastructure was blocked.	If so, give	1point	_____
Subtotal for socio-economic realm			
there were _____ mine victims in the last 24 months.	Multiply with	2	_____
		Points for victims	
Total mine impact score:			

## 2. “Community Scoring, the Yemen Example”

### Community Scoring, the Yemen Example

Aldo A. Benini (excerpted)

21 November, 2000

#### Background

##### ***Precedent***

The Survey Working Group took a close look at the impact scoring and community classification mechanism created for the Socio-economic Impact Survey at its spring 1999 meeting in Oslo. Since then, data collection, processing and storing instruments have been developed in greater detail. The IMSMA field module has been installed in several countries, and mine action staff trained in its use were exposed also to the scoring and classifying feature. SAC investigated and documented the logic of the scoring and in particular the weak-metric approach used for it (Benini 1999). Together with the survey protocols, SAC has developed a generic a scoring sheet for field staff. It provides default weights for each indicator used as well as space to calculate the score and record proposed local adjustments by field teams in exceptional circumstances.

The Survey Working Group took account of those developments at its Washington meeting in November 2000. It approved a version of the scoring system that allowed survey implementing organizations to use variable weights for livelihood and institutional area blockage factors. This option has been used notably for scenario development in the Yemen follow-on projects. Also in fall 2000, IMSMA revised its field module, including place holders for country-specific blockage factors that could be defined locally and be assigned weights tying them to the scoring scheme. The second Survey Operational Review was held in December 2000; representatives of several surveys and donor agencies responded favorably to the SAC proposal to integrate the new IMSMA feature into this protocol.

#### Policy considerations

##### ***International consistency***

Social movements supply society with critical self-descriptions. The movement against landmines depends on this survey in order to defend its share of the attention space. A consensus exists that the movement needs at least a decade’s worth of sustained funding in order to make a significant mine action impact. The country surveys that will be done over the next years must inform the cause in a consistent and cumulative way. Donors want to see the situation of several countries, and they want to be assured that country surveys do not promote “grade inflation” by the way they score and classify communities.

### **Country specifics**

The history of conflicts in which landmines were laid, and the physical and social ecology of the affected communities, differ from country to country, and may differ very significantly also among the regions of a given country. In particular, the part of the scoring that deals with blocked access to livelihood and institutional areas may call for different indicators, in an analogy with educational tests using varied items from district to district while trying to safeguard test equivalency. The IMSMA field module revision has created the basis, on the data management side, for introducing country-specific impact factors, and it is up to the protocol to ensure their use in a manner that maintains international consistency. The diagram exemplifies this idea schematically, for two country surveys using four common indicators (in practice, there will likely be more), two specific indicators each and respecting an identical weight sum:

		Country A		Country B	
		Data	Weight	Data	Weight
Common	Indicator 1		1		1
	Indicator 2		1		2
	Indicator 3		2		1
	Indicator 4		1		1
Country-specific	Indicator 5		1		
	Indicator 6		2		
Country-specific	Indicator 7				2
	Indicator 8				1
Sum of weights			8		8

### **On-going Experimentation**

In a comparative research perspective, the socio-economic impact survey movement is in its infancy, part of which is a dearth of measures with any validity more robust than what accidental collections of expert individuals believe. This situation needs to be improved by research and, specifically concerning impact scoring, by concerted experimentation. Research into socio-economic indicators is being sponsored by UNDP and GICHD (see, for example, Millard and Harpviken 2000) while the International

Peace Research Institute in Oslo is doing more ethnographically oriented studies in the effects of assistance of mine-affected communities.

### **Alternative weights set by national experts**

The survey organization convened eight experts from different government departments dealing with some of the consequences of the landmine problem. They were asked to vote on the severity of the impact that the various types of blockages created in their personal opinion. A technique known as “Nominal Group Technique”, described in

#	Blockage	R A N K						Votes	Rank sum
1	Irrigated crop land	4	3	3	2	2	1	6	15
2	Rain fed crop land		3	2	2			3	7
3	Pasture	4	4			2	1	4	11
4	Drinking water points	4	4	3	2	1	1	7	16
5	Water points for other uses							0	0
6	Non-cultivated area				2			1	2
7	Housing area	4	4	3	3		1	6	16
8	Roads	4		3	3	2		4	12
9	Other infrastructure						1	1	1
	Total							32	80

Delbecq et al. 1975/1986, was used to ensure consistent voting and vote aggregation. The result is shown in this table:

Weights were then calculated by scaling the total rank sum to 10, the sum of the weights budget. This was done by dividing each of the item rank sums by 8 (because  $10 / 80 = 1 / 8$ ). This led, for the purpose of scenario development, to a set of non-integer weights. Drinking water and housing received the highest weights,  $16 / 8 = 2$ .

Using those weights, the 592 affected communities were reclassified for severity of impacts. The same category bounds were used as in the original scoring. As a result, the number of high- and medium-impact communities increased by about one third. This table compares the two scorings:

Communities by severity of impact	Original scoring	Weights set by national experts
High	14	20
Medium	84	120
Low	494	452

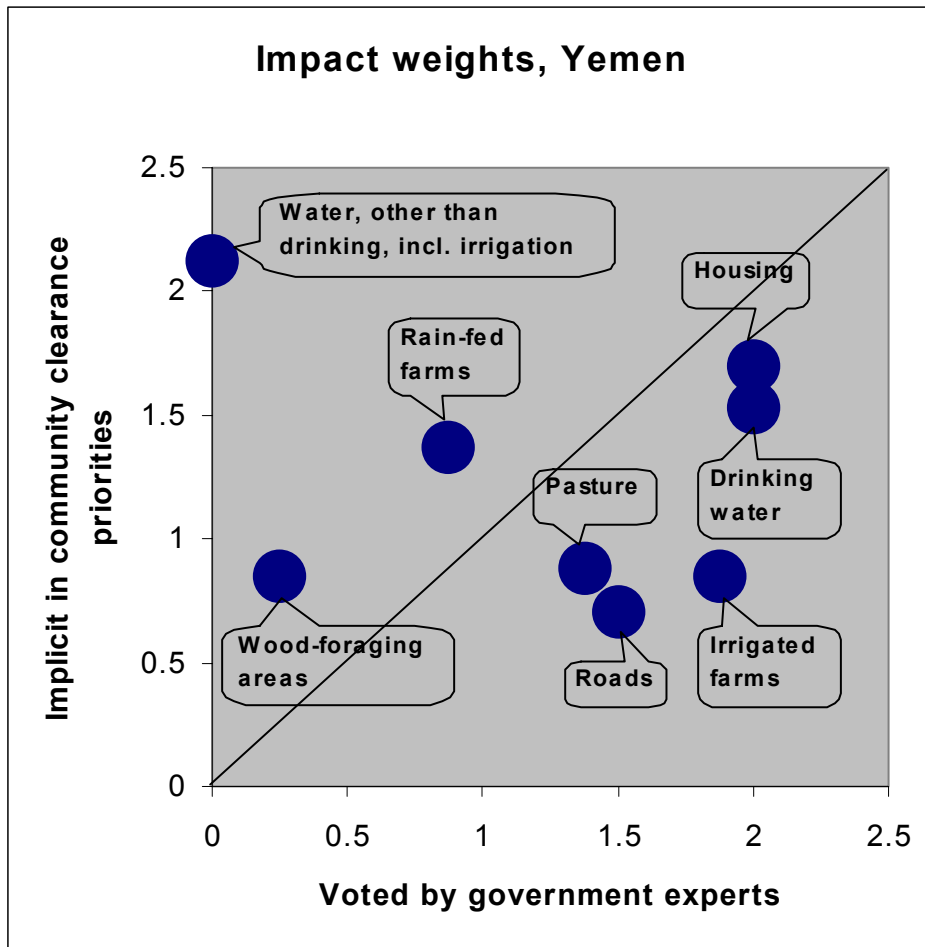
While the scoring obviously is sensitive to the weight changes, the overall distribution is fairly robust. It should be pointed out that fractions were accepted as weights here because of the sheltered environment in which the experiment took place. In normal practice, legal values for weights should remain restricted to 0, 1, 2, and 3 – otherwise the field staff, whose active score calculation is important for both motivational and error-detecting reasons, may have difficulty with the scoring sheet.

**Expert vs. community priorities**

In Yemen, key informants in communities with more than one mined area were asked to rank the areas for clearance priority. Because some of the properties of the first- vs. lesser-priority areas are known, the weights that communities attach to areas with particular uses can be inferred to a limited degree.

We make the rather far-fetched assumptions that key informants in all communities used the same weights, and that these were proportionate to the ratios between the numbers of first- to second-priority areas in each blockage type. The weights are then normalized so that their sum equals 10, as for the experts' weights.

The resulting graph shows some areas of agreement and disagreement, but these need to be carefully interpreted:



There is good agreement that both drinking water and housing blockages should receive high priority for clearance. The differences re: water incl. for irrigation and irrigated farms may be more semantic, by the way questions were phrased to the two

audiences; if they weights for the two items were averaged within each group of respondents, this would produce a point much closer to the diagonal, near the point for rain-fed farms. Significant differences, however, exist in the valuation that government experts and community key informants made of rainfed farms, pasture and wood foraging areas. The rationale for the government experts to put a lower weight on rain-fed farms (which clearly has higher unit productivity than pasture) is difficult to comprehend. Both groups were predominantly male, which may be the reason why wood-foraging areas, a women's domain, received low weights from both. The number of roads blocked in the key informant comparison was too low to allow any conclusion.

The comparison indicates that many stakeholders in Yemen were aware of the critical importance of clearing access to blocked drinking water sources. It also shows the danger of creating scenarios and, based on them, possibly strategic plans to which the concerned communities have little input, as is evident in the weight discrepancy regarding pasture and rain-fed farms. This danger is mitigated by the construction of the score, which is heavily sensitive to the number of recent victims, regardless of the type of area in which they came to harm.

The table underlying the graph is also appended.

## **Prospects**

The Yemen survey used the initial scoring protocol, modified with the revised category bounds. The resulting community classification was well accepted by all who reacted to the survey report, including the government of Yemen. In a follow-on project, some scenario development involving government officials was done, using a different set of weights. The results were not dramatically different (up from 14 to 20 high-impact communities, out of a total of 592 affected communities). This set a precedent, however incomplete, for a committee of national experts and survey leaders to determine weights using their knowledge of the country-specific landmine impacts. As some participants at the December 2000 Operational Review underlined, the process of determining additional indicators and setting weights has to be initiated early enough to influence questionnaire adaptation and has to be managed carefully for adequate stake holder involvement.

The availability, in the revised IMSMA field module, of user-defined impact factors encourages such experiments. Taking advantage of this feature, country surveys may create an impact index that combines several thematic sub-scales, each of them nourished by items that they can define locally, within rules that the entire survey community will adopt. This is in analogy to other systems of organized collective memory that use “scripts” or “cognitive” maps with several levels. These levels are combined flexibly but not arbitrarily. The example has already been mentioned of the tests that are administered in the education system and which feed into course grades and eventually degrees, and a collection of degrees in lifelong education. Equivalency among different school tests is a constant concern, and similarly for the Global Landmine Survey the balance is critical between indicators that have local validity and

the scores based on them that need to be consistent across countries. However, the flexibility needs to be controlled: Just as school leavers need to find takers for their certified skills in the employment market, the mine action community needs to present survey results that donors will appreciate.

## **Conclusion**

This protocol defines parameters that will allow country surveys using IMSMA to move towards a locally adaptable system for the scoring and classifying of mine-affected communities. A measure of flexibility has been created, gauged by the values that direct the surveys. Prominent among these is a concern for international advocacy, mine action relevancy, validity and reliability.

Up to five additional indicators, and variable settings within a maximum sum of weights can be used. Some country surveys may want to go further and use alternative scoring formulae. These organizations are encouraged to experiment with them outside IMSMA in order to create alternatives that will enhance the debate in the Impact Survey community.

## **Bibliography**

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