Selected problems of social risk management

Jacek Kulawik

Abstract

Social risk in traditional terms is the likelihood of some event occurring that will deplete an individual, household or community's assets or increase their future financial needs. They can be considered in various types of arrangements, but the broadest classification was created by the International Labour Organisation. A less well-known approach to social risk is the various types of risks arising from interpersonal and inter-organisational relationships. This perspective is practically absent in Polish literature. The first aim of the article is therefore to fill this gap. The second aim is to bring closer the issue of social risk management. In our country this subject is also very rarely raised and usually on a very general level. Meanwhile, the concept of the social risk management (SRM) has been developed for years. It is also a bridge to the transition to the system of holistic management of all other risks. The article presents its philosophy and instruments, then concretises it on the example of smallholder agriculture, which is most exposed to weather and climate shocks, which makes it very difficult for farms to permanently leave the poverty sphere and undertake economic activities that are more risky, but on the other hand potentially more profitable. The thesis organising the whole discussion is the statement that we should go beyond the narrow boundaries of the essence of social risk management in Poland in order to better understand new threats and prepare for them.

Keywords: social risks, climate risk, social insurance, social risk management.

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Introduction

As we grow up, we are confronted with an ever-increasing number of life's risks that interact with each other in various ways, making it difficult to understand them all and even more difficult to cope with them. Each of us is different and therefore perceives the same sources of risk differently and reacts to them differently, which results in various ways and strategies of dealing with them. Those who, by nature, are more afraid of risk (risk-averse) will be more active in dealing with it. This group, on average, predominates in most human populations. Quite a few, even more than 40%, are risk-takers. Finally, a dozen or so percent are risk-neutral individuals. Risk-neutral individuals, but even more so those who enjoy risk, do not really need institutionalised risk management systems without legal compulsion. It is from among them that the anti-vaccinationists, among others, are recruited.

By all means, it would be desirable for all people to make their own efforts to take a conscious and active approach to the various social risks they encounter in their lifetime (an increasingly long lifetime, if we disregard for a moment the COVID-19 pandemic, which has disrupted previous trends of increasing life expectancy). In general, we have at our disposal here strategies of self-insurance (reducing the effects of the materialisation of social risks) and self-protection (reducing the probability of the above risks).

Unfortunately, the simple fact of the aforementioned prevalence of risk-neutral individuals and risk-takers in human populations means that the above strategies are consciously and consistently applied sporadically. This leaves the need for the emergence of the state, which creates social security systems and various social and financial safety nets. States, by virtue of their power, usually introduce solutions in this area as mandatory and universal, but they differ greatly in their systems for managing social risks, as shown in the article. Finally, governments have to take on the role of the assurer of last resort when some catastrophic and systemic risks materialise.

However, the management of social risks by states generates serious incentive problems among citizens. In the first place, they boil down to the fact that it weakens incentives for self-protection and self-insurance, because people very easily get used to the situation that they can rely on the state budget as a last resort. In this context, we encounter two phenomena:

1) the Samaritan dilemma,

2) a charity hazard.

The former is a situation in which providing assistance to those affected by a disaster demotivates them to improve their situation in the long run[1]. In extreme cases, such individuals may even make aid their life strategy. This dilemma was initially identified in the provision of foreign aid, but over time it has been extended to other areas[2]. We encounter it as an already permanent element in supporting our farmers after drought or other weather anomalies. It results from the current level of development and functioning of our agricultural insurance, but it is also a serious barrier to its spread.

Charity hazard is actually very similar to the Samaritan dilemma. The first to formalise this threat were T. Lewis and D. Nickerson[3]. The centrepiece of their reasoning is the assumption that the existence of public assistance leads to underinsurance against catastrophic and systemic risks. A.P. Raschky in an empirical study of large natural disasters between 1984 and 2004 proved that countries with strong institutions had fewer casualties and recorded lower material losses[4]. Moreover, he noted together with other researchers that there were non-linear relationships between the level of economic development and these losses[5]. In the past decade, however, researchers have increasingly begun to focus on the impact of charity hazard on property insurance. R. Schwarze et al. identified a number of determinants of underinsurance[6]. A.P. Ratschky and D. Osberghaus and A.M. Andor concluded that any budgetary aid to disaster victims leads directly to displacement of not only property insurance but also social insurance[7]. Concretising the above findings for Polish conditions, it is worth noting, however, that the introduction of minimum pensions, the indexing of pensions in a manner increasingly detached from accumulated contributions, and the payment of 13th and 14th pensions lead to the same effect. The

1. J.M. Buchanan, *The Samaritan's dilemma* [in:] *Altruism, Morality and Economic Theory*, ed. E.S. Pelps, New York, Russel Sage Foundation, 1975, p. 110–115.
2. C.C. Gibson, K. Anderson, E. Ostrom et al., *The Samaritan's Dilemma. The Political Economy of Development Aid*, New York, Oxford University Press, 2005, p. 5–8.
3. T. Lewis, D. Nickerson, *Self-insurance against natural disaster*, "Journal of Environmental Economics and Management" 1989, Vol. 16, p. 1–12.
4. P.A. Raschky, *Institutions and the losses from natural disasters*, "Natural Hazards and Earth System Science" 2008, Vol. 8, p. 735–740.
5. P.A. Raschky, R. Schwarze, M. Schwindt et al., *Uncertainty of governmental relief and the crowding out of flood insurance*, "Environmental and Resource Economic" 2013, Vol. 54, No. 2, p. 22–26.
6. R. Schwarze, M. Schwindt, H. Weck-Hannemann et al., *Natural hazard insurance in Europe: tailored response to climate change are needed*, "Environmental Policy and Governanve" 2011, Vol. 21, No. 1, p. 40–47.
7. P.A. Raschky, F. Zahn, *Natural hazard insurance in Europe: tailored response to climate change are needed*, "Environmental Policy and Governance" 2011, Vol. 21, No. 1, p. 820–823; D. Osberghaus, *The determinants of private flood mitigation measures in Germany– evidence from a nationwide survey*, "Ecological Economics" 2015, Vol. 110, p. 1105–1110; M.A. Andor, D. Osberghaus, M. Simora, *Natural disaster and governmental aid: is there a charity in hazard*, "Ecological Economics" 2020, Vol. 169, p. 330–335.

Agricultural Social Insurance Fund institution (KRUS) also has a tenuous link between benefits and contributions paid.

Drawing attention to the Samaritan dilemma and charity hazard is an intentional act. The point is that the standard list of social risks mentioned by Polish researchers seems to be too narrow at present. It would be necessary to supplement it with climate risks and the related risk of natural disasters. Such a convention is adopted in this article. After all, there is already a consensus that by the end of this century Europe will have increased by up to four times the risk of heavy rainfall that hit Germany, Belgium and the Netherlands in July 2021[8]. This will have direct relevance to the KRUS system, as it is accepted that farmers' social security payments are rolled over or even suspended after each disaster. On the other hand, it is a well-documented conclusion that poorer people, including many farmers, already have the greatest exposure to catastrophic and systemic risks, while having the fewest tools to deal with them. The growing importance of climate risk is increasingly recognised by Poles. It is likely to be an independent stimulator of food and energy prices increase, as results from Deloite's research published, among others, in "Rzeczpospolita" daily newspaper of 7.07.2021. It turned out that as many as 80% of us are afraid of the effects of climate change.

The COVID-19 pandemic shows, among other things, that social security and health care systems need to be improved to better cope with similar threats in the future. As a result, the excess deaths in our country exceeded 100,000 people and the average life expectancy of Poles was shortened by 1.4 years, while in Germany, for example, the latter indicator was only 0.2 years. COVID-19 also strongly emphasised the importance of family and social ties for the protection against premature deaths[9]. It turned out that people in eastern Poland still live longer than those in the western part of the country. This article also discusses the specific risks that arise from social relations, which are generally overlooked in the national literature. Let us add at the outset that the deepening political polarisation among Poles is putting enormous strain on these relations. As we know, social security systems are based on the solidarity of citizens.

8. A. Hołdys, *Grożą nam coraz częstsze nawałnice i powodzie*, "Polityka", nr 31, 2021, p. 63–65.
9. M. Śmigiel, *Służba zdrowia się zacięła*, "Gazeta Wyborcza", 2.08.2021, p. 8.

The essence of social risk

The social risk, as any other risk, is in the simplest terms connected with the probability of occurrence of some event which will deplete the present or future property of the household[10]. In a broader perspective, the materialisation of this risk is also a decline in current and expected income, which means the inability to meet certain expenses to achieve goals important to any individual[11]. The above definitions assume that losings are expressed in the decrease of disposable financial resources. The realisation of social risk in certain situations can also mean non-financial consequences, such as the loss of a loved one through death. Such losses, however, are not the focus of social insurance theory and practice. This convention reminds us of the handling of pure risk in property insurance, that is, loss in the financial sense. In more recent accounts of risk in these insurances, it also appears as a positive deviation of the achieved result from the assumed (planned) one. In this broad view, the risk is treated as an opportunity for development, which creative and risk-averse individuals are able to capitalise. In the case of social insurance, an analogy would be the situation of changing jobs due to the appearance of an occupational disease, which in fact could even mean an improvement in the economic and financial position of the person. To conclude the discussion on the relationship between social risks and personal and property risks, it can be said that the latter include an aspect of social risk, because their materialisation can also mean a worsening of the income and financial position of employers and employees, if the resulting losses have not been compensated by appropriate insurance. This problem may become even more complicated when we analyse entities of natural persons and individual farms, where their owners combine managerial and executive functions, and the basic decision-making unit is the household. The death of the head of such a household may, in the extreme, be tantamount to the end of the economic activity of the affected family. This suggests the need to analyse the overall exposure of families to all risks.

A. Adamska considers social risk as a component of macroenvironment risk[12]. The author further assumes that this risk should also be analysed from the point of view of

10. T. Szumlicz, *Szkoła ubezpieczenia społecznego – założenia teoretyczne i konsekwencje praktyczne*, Warszawa, SGH, 2001, p. 30–33.
11. T. Szumlicz, *Świadomość ryzyka społecznego jako podstawowa wiedza o systemie ubezpieczeń społecznych*, "Ubezpieczenia społeczne. Teoria i praktyka" 2017, nr 1, p. 30–33.
12. A. Adamska, *Ryzyko w działalności przedsiębiorstw – podstawowe zagadnienia* [in:] *Ryzyko w działalności przedsiębiorstw, wybrane zagadnienia*, red. A. Fierla, Warszawa, Oficyna Wydawnicza SGH, 2009, p. 110–113.

changes that it causes in people's behaviour, preferences and expectations when they function in different types of organisations and institutions and households.

H. Mazmer also looks at social risk in a very interesting way – he associates it with uncertainty that is common in the world, the source of which is the complexity of the reality that surrounds us, constantly changing in a dynamic and surprising manner (cf. COVID-19)[13]. Under these conditions, most of us find it difficult to understand the processes taking place and the accompanying growing sense of being out of control of the world and, worse, of our own lives. This in no way exempts us from the ethical and moral imperative to try to be managers of our own life risks. Of course, as always, individual psycho-physical predispositions and socio-cultural conditions come into play here. This generalised risk and uncertainty, on the other hand, is fertile ground for such popular conspiracy theories and populist movements and political parties.

On the purely formal and legal side, the International Labor Organisation has created the following classification of social risks:

1. Illness. By virtue of its occurrence, one is entitled to health and monetary benefits.
2. Maternity. The loss of earnings during pregnancy, childbirth, puerperium is compensated and health care is provided during these periods.
3. Disability, that is, the inability to perform any work on a permanent basis. The loss of income here must be adequately compensated.
4. Death of the wage earner.
5. Work accident and occupational disease. This is a complex risk, which implies multiple titles to benefits.
6. Unemployment.
7. Old age. The formal basis for receiving appropriate benefits is attaining the legal age.
8. Unexpected expenses.
9. Need to provide for children, which gives title to material and/or in-kind assistance.

K. Bielawska also understands social risk in a broad sense as the probability of an unforeseen event that will either deplete an individual's assets or increase their demand for financial resources[14]. At the same time, the author presents social benefits available to persons experiencing a random event as part of social security (Table 1).

13. H. Mamzer, *Poczucie bezpieczeństwa ontologicznego. Uwarunkowania społeczno-kulturowe*, Poznań, Wydawnictwo Naukowe Uniwersytetu im. Adama Mickiewicza, 2008, p. 50–54.
14. K. Bielawska, *Ubezpieczenia społeczne w systemie zabezpieczenia społecznego* [in:] *Ubezpieczenia*, red. nauk. M. Iwanicz-Drozdowska, Warszawa, Polskie Wydawnictwo Naukowe, 2018, p. 35–38.

Table 1. Linking social risks to financial benefits payable.

Types of social risk	Benefits due
Illness	Medical benefit
Maternity	Maternity benefit
Disability	Disability benefit (due to inability to work)
Death of the wage earner	Survivor's pension
Work accident and occupational disease	Medical benefit, disability benefit, survivor's pension
Unemployment	Unemployment benefit
Multi-child family	Family benefit
Old age	Pension

Source: Compiled on the basis of: K. Bielawska, Ubezpieczenia społeczne w systemie zabezpieczenia społecznego [in:] Ubezpieczenia, scientific editor M. Iwanicz-Drozdowska, Warsaw, Polish Scientific Publishers PWN, 2018.

Social risk, like any other risk, should be managed. T. Szumlicz, among others, deals with this problem in Poland. This author sees it from two perspectives:

1) as social risk management,

2) as a social process of risk management[15].

The first perspective emphasises the importance of social risks and focuses on their integration into a system. While the second perspective emphasises the entities responsible for the identification of risks, their measurement, prevention and dealing with them once they materialise, which is tantamount to financing their negative consequences. Developing his view, T. Szumlicz also draws attention to the issues of social solidarity, insurance risk community and insurance reciprocity, as well as the place of the state in the whole system of social risk management. The latter is obvious, as it is the state that is supposed to organise this system, as it is a public service and the state is the insurer of last resort. As human populations age, the role of the state steadily increases, because, as the British mathematician Benjamin Gompertz calculated as early as the beginning of the 19th century, after crossing the age of ten, the normal life risk doubles after 5–6 years. This relationship is referred to as the "law of mortality".

Unfortunately, the approach of T. Szumlicz to social risk management is very narrow and general. It lacks explicitly any even loose reference to the standard understanding of this management, in which phases are distinguished: 1) defining the

15. T. Szumlicz, *Ubezpieczenia społeczne w systemie zabezpieczenia społecznego* [in:] *Ubezpieczenia. Podręcznik akademicki*, red. nauk. J. Handschke, J. Monkiewicz, Warszawa, Wydawnictwo Poltext, 2010, p. 245–247.

context (scope, internal and external objectives, opportunities and threats); 2) identifying risks (sources, areas of influence, events, consequences); 3) analysing risks (level, likely consequences); 4) dealing with risks. Szumlicz also lacks any mention of social risk management strategies, i.e. risk prevention, mitigation and management. Therefore, let us examine how these issues are addressed in SRM.

Essence of the SRM concept

Social dimension of risk management in agriculture explicitly appeared in holistic concept of OECD[16]. Its authors referred to the work of R. Holzmann and S. Jorgensen entitled *Social Risk Management: A New Conceptual Framework for Social Protection and Beyond* from 2000. Therefore it is worth bringing it closer, of course adjusting it accordingly. The two World Bank researchers referred to above focused essentially on the problems of social security (labor market intervention, social insurance, social safety net), embedded, however, in social risk management, i.e. encompassing three coping strategies (prevention, prevention, active risk management) at three levels (informal, market instruments, public) and taking into account multiple actors (individuals, households, territorial and social communities, NGOs, state administration at all levels of government, international organisations). Referring, among others, to the views of C.A. Pigou (a 1932 book) and W.H. Sinn (a chapter in a 1998 collective work), Holzmann and Jorgensen strongly emphasise that social security should be oriented toward achieving two goals:

1) to protect at least the minimum socially acceptable standard of living under the circumstances;
2) to encourage more risky activities that can make a positive contribution to socio-economic development and general well-being.

According to Holzmann and Jorgensen, traditional social protection emphasises too much the role of the public sector, net costs and expenditures, but at the same time underestimates the positive effects on sustainable economic development, synergies between different intervention programs and offers few strategic recommendations for effective poverty reduction. The answer to these weaknesses is to be found in the social risk management, which is generally designed to achieve two goals:

1) help individuals, households, and communities manage risk.
2) provide support to the extremely poor.

16. *Managing Risk in Agriculture. A Holistic Approach*, OECD, Paris 2009; *Managing Risk in Agriculture. Policy Assessment and Design*, OECD, Paris, 2011, p. 22–27.

Essential to Social Risk Management (SRM) are the following assumptions:

1. Social security must undoubtedly be a social safety net and a springboard for poor people to improve their economic position permanently by taking up adequately remunerated work or profitable economic activities.
2. Social protection is not a cost but an investment. Hence, poor people should have access to basic social services and be able to effectively counteract the irreversible negative effects of various shocks.
3. There is a need to focus more on addressing the causes of poverty rather than its symptoms. This should be followed by more opportunities for poor people to engage in activities with a more favourable profit-risk balance, and on the other hand, by limiting the scope of inefficient and unfair informal risk-sharing mechanisms.
4. Reducing poverty and deprivation through budget transfers exceeds the fiscal capacity of most developing countries.

It follows from the above that SRM transcends the boundaries of traditional social security as it encompasses sound macroeconomic policies, good governance, access to basic education and social protection. SRM furthermore draws on public, market and informal instruments, creating appropriate combinations of them, analysed and designed for their positive impact on growth and socio-economic development.

In a more disaggregated view, SRM is expected to achieve its goals by statistically increasing social welfare (reducing the variability of probabilities of adverse events; increasing consumption that is smoother over time; achieving a more equitable distribution of income and wealth) and by dynamizing economic development and economic growth (smoothing income and consumption over time; improving the cost-effectiveness of informal risk-sharing mechanisms; reducing the costs of public social security instruments). Of course, in addition to this there is the positive impact of SRM on the reduction of poverty and deprivation, as already mentioned above, but it is strongly emphasised here that it is necessary to overcome the great reluctance of poor people to undertake activities that are inherently more risky but offer higher benefits.

The issue of information asymmetry occupies an important place in Holzmann-Jorgensen's concept. The point of reference here is the so-called ideal Arrow-Debreu world, i.e. the symmetry of its distribution among all economic actors and the completeness of all markets. The sources and types of risk occurring at that time, in principle, do not need to be explicitly managed, as they can be fully financed by purely market-based, first-best solutions. However, the situation changes dramatically when information asymmetry occurs. In that case, some risk transfer markets may not exist at all, while those that do exist may offer only partial protection and may

not function fully effectively. This opens the door to public intervention, but at the same time its unreliability and the generation of political risks must be taken into account. An in-depth analysis of both information regimes is provided in Table 2.

Table 2. Effects of symmetric and asymmetric information

In an ideal world of Arrow-Debreu, information is symmetrically distributed and the set of markets is complete. All economic actors operating in an economy can recognize, agree with each other and also verify states of nature, while knowing the preferences and perceptions of all risks in other actors. Consequently, each risk can be matched with appropriate market solutions in order to finance the consequences of its materialization. The role of governments then remains to deal only with redistributive issues, so as not to cause deformations in the sphere of income and wealth creation. The following implications emerge from the above: – Given complete knowledge of each risk, prices can be set in an actuarially fair manner, and able-bodied individuals can purchase full coverage. The insurance itself then becomes a state-dependent claim, a first-best instrument for any risk, including catastrophic risks. – Individuals with disabilities can rely on public transfers as well as private transfers offered primarily for altruistic reasons. – A more equitable distribution of income and wealth can be achieved through taxes and uniform (lump-sum) transfers in a way that does not deform economic incentives, if a socio-political consensus can be achieved. – Any efficiency in the Pareto sense can be described as an equilibrium state of perfectly competitive markets, and issues of efficiency and equity can be analyzed and designed separately.
In the real world, however, there is an asymmetric distribution of information. This gives rise to the following consequences: – Moral hazard and adverse selection and incomplete property rights lead to inefficiently functioning or collapsing risk markets, forcing governments to provide protection against its negative effects by introducing appropriate regulations. – Transaction costs accumulate and special institutions, such as contracts in debt and labor markets, are created to circumvent costly verification of natural states and mitigate the shortcomings of informal risk-sharing instruments. – Non-exogenous risks emerge that can be controlled and shaped by economic agents. – Full insurance, i.e. contracts dependent on states of nature, are no longer the first-best or even the second-best in risk management. – What follows is a combination of efficiency and redistributive issues. In other words, efficiency-oriented interventions also have distributional effects, but this produces a more equal distribution of wealth. – Some economic actors are better at using unequally shared information to manage risk, making information a commodity and a tool for creating and consolidating power and authority. – The combination of inefficiencies of markets and governments in offering risk management instruments raises specific market and political risks, which should be taken into account by developers of various programs in public policy.

Source: Based on: R. Holzmann, S. Jorgensen, Social Risk Management: A New Conceptual Framework for Social Protection, and Beyond, "International Tax and Public Finance" 2001, Vol. 8, p. 12–13.

Dealing with risk, the most advanced form of which is the creation of a risk management system, requires precise identification of its sources, types, degree of independence at micro, meso and macro levels. Note at once that market-based or informal risk management instruments are generally reasonably effective only for specific/uncorrelated types of risk, and may fail completely for macroeconomic correlated risks and catastrophic risks of natural and anthropogenic nature, including, for example, epidemics and disease pandemics (cf. COVID-19). An example of the use of such a convention can be seen in Table 3.

Table 3. Classification of sources and types of risk

Risk type	**Level of analysis**		
	micro	**meso**	**macro**
specific ◄			► **correlated**
natural		torrential rains landslides volcanic eruptions	earthquakes floods droughts storms
health related	illnesses scathes disabilities	epidemics	
over the lifecycle	birth old age death		
social	crimes domestic violence	terrorism gangsterism	civil unrest war social turmoil
economic	unemployment crop failure in agriculture bankruptcy of companies	displacements	collapse of production payment, currency and financial crises technological or trade shocks
political	ethnic and/or racial discrimination	riots	policy failure of social programs coup d'état
ecological		contamination deforestation nuclear disaster	

Source: Based on: R. Holzmann, S. Jorgensen, Social Risk Management: A New Conceptual Framework for Social Protection, and Beyond, "International Tax and Public Finance" 2001, Vol. 8, p. 15.

Holzmann and Jorgensen make a very interesting connection between the goals of risk management and the measurement of the latter, as reported in Table 4.

Table 4. Risk management objectives versus risk measurement

Objective 1: Minimise the amount of maximum possible welfare loss. This approach is particularly important for poor and shock-prone people, because such losses can even lead to misery or even death. The "min-max" decision rule applies here, which makes it possible to avoid actions that result in maximising the aforementioned losses. The advantage of the rule is that there is no need to know the probabilities, since it is enough to know the domain of the loss function and its size: **[min max (loss)]:** *quantity*
Objective 2: Minimise the probability of consumption falling below a set threshold. This best fits the situation of people near the poverty line. The "safety first" decision rule applies here, allowing us to guard against events that would cause expected consumption (C_t) to fall below a predetermined threshold (C_{min}). To apply it, we must have information about the expected income in each alternative, the threshold consumption, and the probability (*Pr*) of the measured risk occurring: **[min $Pr(C_t \leqslant C_{min})$]:** *probability*
Objective 3: Maximising the expected rate of return for a given level of return volatility. This applies to people with higher incomes, for whom a decline in income does not mean being in poverty or destitution. The decision rule here boils down to maximising a particular expected utility function under the constraints imposed on income volatility in the various decision alternatives. The information requirements here are the broadest: one needs to know the risk preferences, the expected returns of the asset portfolio, and their distribution. For a utility function $V(\mu,\sigma)$ whose arguments are only the mean and standard deviation, we can write the above rule and risk measure as follows: **[max $V(\mu,\sigma)$]:** *standard deviation (σ)*

Source: Based on: R. Holzmann, S. Jorgensen, Social Risk Management: A New Conceptual Framework for Social Protection, and Beyond, "International Tax and Public Finance" 2001, Vol. 8, p. 18.

Regarding risk management strategies and their level of formalisation, Holzmann and Jorgensen mention three types:

1. Prevention, which is oriented towards reducing the probability of negative deviations of actual values from expected or planned values materialising, i.e. the occurrence of a down-side risk.
2. Containment. In this case the aim is to reduce the negative consequences of a future down-side risk. The means to implement such a strategy are: portfolio diversification, taking out informal and formal insurance and hedging, i.e. using financial market instruments with futures trading as a leading instrument.
3. Coping i.e. dealing with the consequences of the risk that has materialised.

When discussing the degree of formalisation, Holzmann and Jorgensen meant the arrangement or agreement that creates the framework for implementing the above strategies. It was assumed that these would be informal arrangements, based on market solutions and initiated by or even imposed by public authorities.

From the combination of these two dimensions: type of strategy and type of agreement, a sample matrix was created, which is shown in Table 5.

Table 5. Examples of relationships between strategies and arrangements for managing social risk

Strategies	Agreements/ arrangements		
	informal	**market-based**	**public**
risk reduction	– less marketable – production – migrations – proper nutrition and weaning – prevention and hygiene	– employee training – financial education – company and industry labor standards	– sound macroeconomic policies – service training – labor market policies – reduction of child labor – disability policies – prevention against AIDS, etc.
risk retention portfolio management	– multitasking – investment in human and physical capital – investing in social capital	– investments in various financial assets – microfinance	– pension system – transfer of assets – protection of property rights – support of financial markets for the poor
insurance	– marriage/family – community agreements – split leases – related work	– annuities – crop insurance	– compulsory social security
hedging	– multi-generational families – employment contracts	– disability insurance	
facing the risks	– sales of assets in kind – neighborhood loans – intra-community transfers and charity – child labor – release of savings in human capital – temporary migration	– sell of financial assets – bank credits	– disaster relief – social transfers and aid – subsidies – public works

Source: Based on: R. Holzmann, S. Jorgensen, Social Risk Management: A New Conceptual Framework for Social Protection, and Beyond, "International Tax and Public Finance" 2001, Vol. 8, p. 20–21.

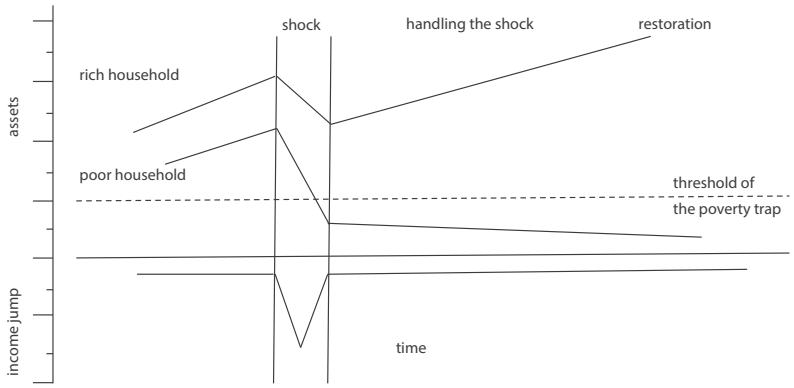
SRM in small-scale agriculture

Integral components of developing countries' agricultural risk management strategies and policies are social assistance and public works as elements of the social safety net. This assistance can be provided in the form of cash transfers and, for example, school meals for children. It very often occurs in the aftermath of a severe drought. Unfortunately, these instruments usually provide short-term relief. Therefore, it is highly advisable to reach for other measures: educational and training measures, advisory measures, measures to strengthen and develop the social and technical infrastructure of rural areas, which are sometimes more effective than ad hoc aid.

Negative effects of risk materialisation in smallholder agriculture in developing countries may be very severe, because many households in developing countries are on the verge of falling into poverty trap. This relationship is very well described by the graphical model constructed by M. Carter et al. presented in Figure 1[17]. We can see that the poverty trap is marked by a certain minimum level of assets, which still allows for their simple reproduction, investment in basic education of children and even a long-term improvement in economic efficiency. Let us also note immediately how easily poor households can fall into this trap when there is even a short-run shock, which is generally transitory. Since we know that the primary source of asset multiplication is accumulated savings, we will also not be surprised by a decline in income after a shock.

17. M. Carter, P.D. Little, T. Mogues et al., *The long-term impacts of short-term shocks: Poverty traps and environmental disasters in Ethiopia and Honduras*, BASIS CRSP Collaborative Research Support Programme, No. 28, 2005, p. 35–38.

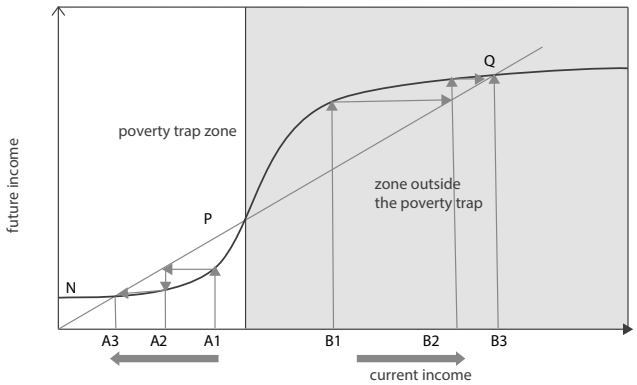
Figure 1. The mechanism of falling into the poverty trap due to the onset of climate shocks according to M. Carter et al.



Source: Own elaboration based on: D. Cervantes-Godoy, S. Kimura, J. Antón, Smallholder Risk Management in Developing Countries, OECD, Paris, 2013, p. 44.

A very different view of the poverty trap is taken by V.A. Banerjee and E. Duflo. This pair of 2019 Nobel laureates in economics assumed that current income, through its ability to finance certain production and consumption expenditures, affects future income. This mechanism is explained in a nutshell in Figure 2. We can see that a household that is in the poverty zone can very easily get caught in a vicious cycle of declining income.

Figure. 2. Relationships between current income levels and future income and the poverty trap

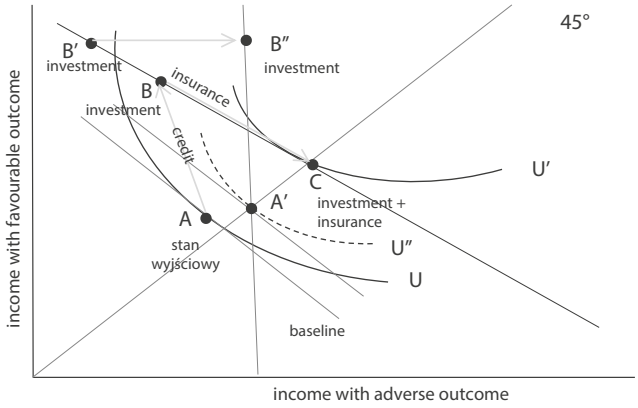


Source: Own elaboration based on: A.V. Banerjee, The two poverties [in:] Insurance against Poverty, ed. S. Dercon, New York, London, Oxford University Press, 2005, p. 115.

In contrast, the family in the shaded area already has the kind of income that gives it the opportunity for further growth, which can enable a sustainable exit from poverty.

It has already been pointed out that small farmers in developing countries, but not only there, very often choose "low-risk-low-profitability" strategies. Among other things, this has important implications for investing in and sustainably moving out of poverty and deprivation zones. Let us use for this purpose the analysis of V.A. Banerjee, the essence of which is captured in Figure 3. The starting point is the assumption that investment can improve as well as worsen the income position of a given household. The 45° line in the figure below represents equal income in both states. The further a point is away from it, the more risky a combination it illustrates. The initial equilibrium state of the household is represented by point *A*.

Figure 3. Household investment and their credit and insurance decisions



Source: Own elaboration based on: A.V. Banerjee, The two poverties [in:] Insurance against Poverty, ed. S. Dercon, New York, London, Oxford University Press, 2005, p. 117.

This corresponds to the strategy "low risk – low profitability/profitability/return, and here: low expected income". Now imagine that this household is considering making an investment that will take it to point B, with higher expected income, but riskier. The condition is one: access to credit. This household can also combine the investment with the purchase of insurance. In this way, it will be at point C, where expected income will increase and risk will decrease. All that is needed is free access to the insurance market. As we can see, we are moving here in equilibrium conditions, which are determined by the existence of a perfect credit and insurance market and the absence of transaction costs.

The situation definitely changes when one moves to the real world, and thus takes into account the difficulties of poor households to access credit and/or insurance. In the first case, it can be seriously impeded to make an investment to move from A to B. In turn, the lack of insurance may stand in the way of an investment that is labeled to move from point B to C. Consequently, the household may fall into a poverty trap as a result of despair/desperation (lack of credit) or another risk management instrument.

Imagine further that, although insurance is not available in the market, the household can take out a loan. It is then possible to make investment B and avoid the poverty trap. However, the problem may become more complicated if the borrower is risk averse or if a riskier investment B' is available to him. Unfortunately, the latter promises lower utility than the initial one at point A. The household should therefore forego investment B', but by staying at point A, it risks falling into a poverty trap due to its risk aversion. However, if it could purchase insurance or a similar risk-reducing instrument, investment C would become quite realistic. Thus the household would avoid falling into the above trap.

Banerjee now turns to policy issues, that is, relating to insurance, social safety nets and credit, and combinations thereof. The development of traditional and index insurance markets alone, even subsidised ones, cannot help households touched by impeded access to credit. Instead, it can facilitate the realisation of B' and C investments where the primary constraint was the inability to reduce risk. In turn, insuring or guaranteeing credit for certain groups of households may be an interesting option. In some situations, a substitute for insurance may be a safety net, which in Figure F is a vertical line, perpendicular to the x-axis, reflecting the minimum income guaranteed by the government. This is when one might try to shift from investment B' to B". Some previously credit-suffering households may also benefit, expressing the move from A to A'. Unfortunately, an overly generous safety net may discourage both types of farms from investing. Finally, public authorities can adopt a course of encouraging the development of the credit market. The beneficiaries of such a policy will primarily be farms previously confronted with external credit constraints that can make B or C investments. Of course, governments may try to implement broad policies oriented to mitigate credit constraints and risk transfer from agriculture to the insurance and financial markets. These are very demanding policies that can be socially and economically inefficient if poorly addressed. It is often better to first create a sound technical, economic, and legal and regulatory infrastructure that promotes the sustainability of all markets.

Another look at social risk

Social risk appears in social insurance in the context of relations between employers and employees and when the premiums collected by the funds are entrusted for management to entities of the financial sector specialising in this type of services. Everywhere we are dealing with agency relations, in which one of the parties (principal) commissions some activity to the other party, called agent. These relationships raise the problem of reconciling the parties' motivations and counteracting the agents' opportunistic behaviour. These problems are mainly dealt with by contract theory.

In agency relationships, social risk manifests when the decision maker views other people as the main source of uncertainty[18]. Interestingly, it can then very often be the case that people show more aversion to social risk than to normal risks, including natural risks. This is explained by the fact that in the case of interpersonal relationships the main uncertainty comes from the fact that we do not know the intentions of other people. Consequently, their behaviour is less predictable and satisfactorily controllable for us, and is usually uncontrollable at all. This uncertainty is compounded by the fact that attitudes to social risk are variable over time and highly dependent on the particular context in which relationships are established. In the most general sense, the differences between social risk aversion and traditional risks are such that the demand premiums for accepting the former type of risk are usually higher than for the latter. If social risks were somehow insurable, higher premiums would have to be paid for such a service.

Social risk aversion may also lead an investor, such as a pension fund, to be less willing to outsource its asset management services to more financially competent entities. On the other hand, such investors may implement systems to monitor managing agents more closely. However, if social risk aversion is similar to financial risk attitudes, the above relationships may even reverse. More formally, this has been described in great detail by J. Bohnet and R. Zeckhauser in the form of an experimental paradigm, referred to in the literature by the acronym BZ[19]. It further explains the frequent co-occurrence of aversion to unfriendly intentions of individuals with whom we interact and aversion to delegation.

J.V. Butler and J.B. Miller extended the BZ paradigm, again in experimental economics, to the question of the determinants of social risk aversion and the premium

18. J. Bohnet, F. Greig, B. Hermann, R. Zackhauser, *Betrayal aversion: Evidence from Brazil, China, Oman, Switzerland, Turkey and the United States*, "American Economic Review" 2008, Vol. 98, No. 1, p. 850–854.
19. J. Bohnet, R. Zeckhauser, *Trust, risk and betrayal*, "Journal of Economic Behavior and Organization" 2004, Vol. 55, No. 4, p. 75–80.

demanded for accepting it, separating, however, the aversion pertaining to the relationships themselves from the delegation aversion[20]. As a result of their research, Butler and Miller concluded that other people's intentions are a fundamental determinant of the above risk premium. Interestingly, however, under certain conditions this premium can change sign from positive to negative values. It often happened in experiments that participants preferred social risk to traditional risk if they could only partially reflect others' intentions. However, delegation aversion alone could not satisfactorily explain the mechanisms determining attitudes toward social risk. Interestingly, agents' incompetence may increase principals' tolerance for social risk. This relationship may be exploited by agents with strategic status, which in aggregate leads to sub-optimality, for example, in financial investment decisions, and this depletes social welfare.

Related to social risk aversion, however, is the problem of human happiness. As Daniel M. Haybron, a philosopher at Saint Louis University, shows, there are five sources of happiness: a sense of security and attitude, often reduced to popular positive thinking; a sense of decision-making sovereignty and autonomy; and the ability to create, maintain, and develop social ties. We are, after all, following Aristotle, social and acting beings. Haybron believes that the strongest determinant of our individual happiness is an active life. Following this, referring to modern portfolio theory, a fundamental tool in risk and financial management, each of us must find a unique point of balance between the risks of interacting with other people and the benefits we can gain by doing so.

Professor Bogusław Pawłowski, an anthropologist from Wrocław University, claims that social isolation increases the risk of premature death twofold. Therefore, we can risk a thesis that for 95% of us the lack of contact with other people is one of the most traumatic experiences in the long term. Many studies clearly show that friendships, successful marriages and compatible families reduce the incidence of viral diseases fourfold and increase the effectiveness of vaccinations, which is extremely important, for example in the context of COVID-19. These relationships additionally reduce the so-called anxiety attachment style (building relationships based on fear and low self-esteem). We are therefore more Homo Societas than Homo Sapiens. Behaviourists add that the various social games in which we consciously or unconsciously participate may even be uncooperative, but on the other hand they show that trust in contacts with strangers is usually the most effective life and business strategy. Perhaps in some sense we are guided here by unrealistic optimism, a term coined by Neil Weistein, a psychologist at Rutgers University. We think that entering into a relationship will produce beneficial results for us. We certainly need more realism here, but more in the assessment of our own competence and behaviour.

20. V.J. Butler, B.J. Miller, *Social Risk and the Dimensionality of Intentions*, "Management Science" 2018, Vol. 64, No. 6, p. 432–436.

Generalised uncertainty and distrust deepened after the outbreak of the COVID-19 pandemic. Its effects include a global boom in the market for cryptocurrencies, i.e. digital assets transferred without the intermediation of banks and governments. For many people, they have even become a kind of anchor of the much sought-after stability. Allegedly, they are supposed to operate on completely different principles than traditional financial systems, allowing them to be decentralised ("DeFi") by creating automated loans and financial instruments, then bundling them into multi-story structures designed to completely eliminate risk, and which can be traded repeatedly. This is an easy way to create financial bubbles that must burst over time, although no one knows when. Meanwhile, this market increasingly attracts non-professionals who fantasise that pure profits can be made without any effort or activity in the real world. They are most likely to be the first to lose from the bursting of the bubble. As humans, we are probably not reformable at all. So our domestic scandals like Amber Gold or Getback are of no use.

Unfortunately, macroeconomists and central bankers, supporters of the so-called hydraulic Keynesianism, have contributed greatly to these attitudes. This is a doctrine and policy that aims to regulate everything and on the other hand solve all problems with monetary and fiscal expansion. This is what happened in the 2008–2009 crisis and now, during the COVID-19 pandemic. It is the "plumbers" who largely create the illusion of a world without risk. They are also the ones who, to a large extent and in the long run, turn risk, i.e. a measurable category, into incalculable uncertainty, which in a straight line leads to chaos. Unsurprisingly, male "plumbers" are more dangerous than female "plumbers" because the former at most pay attention to economic and financial risks. Women are also more likely to be driven by social empathy. In addition, women, on average, are more risk averse. Leaving aside the gender of the "plumbers", we must at all times be aware of their short-sighted and limited perspective and the fact that they are not the ones who will bear the consequences of the materialization of increasingly complex and correlated exposures to various risks, hazards, uncertainties and ambiguities.

Conclusion

Social risk is prevalent, creating a variety of risks for individuals and households and communities. This circumstance implies the need to manage it, which is generally done within the framework of traditional social security. However, R. Holzmann and S. Jorgensen in 2000 proposed a completely new concept of managing these risks, namely the social risk management (SRM). It is distinguished

from the traditional approach by its orientation towards supporting individuals, households and human collectives, but also extremely poor people. Holzmann and Jorgensen also look at the essence and functions of social security quite differently. It is about protecting a universally accepted minimum level of living conditions, but even more so about motivating people to undertake more risky activities that can multiply socio-economic prosperity. Their views are concretised in different types of strategies for social risk management in smallholder agriculture, which dominates in Poland and is most exposed to the negative effects of progressing climate change, poverty and deprivation. The article also provides a broad overview of unorthodox approaches to social risk, which are rooted in interpersonal and inter-organisational relationships. However, in a world of deepening interdependencies and increasing global risks (climate change, more pandemics, resource depletion, migration, etc.), we urgently need more advanced and mature concepts of holistic management of social risks, at local, regional, national, European and global levels.

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received: 22.09.2021
accepted: 15.11.2021