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Ministry of Foreign Affairs of the Netherlands

PROMOTING ACCESS TO AGRICULTURAL INSURANCE IN DEVELOPING COUNTRIES[1]

AGRICULTURAL INSURANCE DEVELOPMENT PROGRAM (AIDP)

STRATEGY PAPER - 2013-2015

MAY 6, 2013

INTRODUCTION

1. **Many pilot agricultural insurance schemes have not scaled up, and hence have had little impact on the resilience of rural livelihoods**. Agricultural insurance that does not scale up cannot have a substantial impact on agricultural productivity or rural livelihoods. In recent years numerous private sector agricultural insurance pilots have been implemented in developing countries, usually with support from donor partners and mainly for index-based crop insurance. However, only a few, notably the crop insurance programs in India and the index-based livestock insurance program Mongolia, have scaled up to sustainable programs.

2. **Experience suggests that sustainable, scaled up agricultural insurance programs should be based on an equal partnership between the public and private sectors.** The limited success of recent private sector agricultural insurance pilots can partly be explained by under-developed risk market infrastructure. This has arisen both from a lack of coordinated investments in key public goods, and the absence of institutions with sufficient capacity to ensure that the incentives of market participants are aligned with those of clients. The roles of the public and private sectors can vary from country to country, as premium volumes and policy objectives differ. However, if a country lacks an appropriate risk market infrastructure and associated public goods, agricultural insurance is unlikely to be sustainably scaled up for the benefit of farmers and herders.

3. **The AIDP builds on the World Bank Finance and Private Sector Development (FPD) Vice Presidency's experience working with agricultural insurance programs that have achieved scale.** The AIDP is led by FPD's Disaster Risk Financing and Insurance Program (DRFI Program), a program under Non-Bank Financial Institutions (FCMNB) unit of the Global Capital Markets Practice. It is in partnership with the World Bank Agricultural Risk Management Team (ARMT) and the Netherlands Ministry of Foreign Affairs. The DRFI Program has been providing technical assistance and policy advisory services on agricultural insurance for more than 10 years, both on indemnity-based and index-based (including weather) insurance. In particular, the DRFI Program contributed to the establishment of two agricultural insurance programs which have reached a large scale: the index-

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based livestock insurance program in Mongolia and the major reform of the world's largest crop insurance program in India. For the 2011-12 agricultural year, 10,900 herders were covered by the index-based livestock insurance program in Mongolia (9.4% of all herders), and 29 million farmers were insured through the Government of India's agricultural insurance schemes (representing 22% of total farmer households).The ARMT provides technical assistance and training on agricultural risk management issues, including agricultural risk diagnosis. The Netherlands Ministry of Foreign Affairs is an established leader in the promotion of sustainable agricultural risk management in developing countries.

4. **AIDP focuses on public aspects of public private partnerships, and leverages existing programs both within and outside the World Bank Group.** AIDP builds on the complementary expertise of the DRFI Program and the ARMT, in partnership with the Global Facility for Disaster Reduction and Recovery (GFDRR). By providing the risk market infrastructure necessary for constructive, sustainable private sector engagement in agricultural insurance, AIDP complements the work of the Global Index Insurance Facility (GIIF). AIDP will also work closely with research partners, such as the World Bank's Development Economics Vice-Presidency (DEC) and research networks and organisations such as I4 and IFPRI, to develop and implement AIDP's monitoring and evaluation framework. This will enable lessons learned through AIDP to be disseminated to a wide audience, and to ensure that lessons learned by others are incorporated into AIDP policy and practice going forward.

5. **Whilst the strategy of AIDP focuses specifically on agricultural insurance, other ways to mitigate, transfer, or cope with agricultural risk can be more effective in some contexts.** Risk transfer products can provide vital protection against low frequency, high impact events, but can only ever offer part of a comprehensive solution to effective agricultural risk management. The AIDP strategy focuses on risk transfer products, as part of a comprehensive strategy to increase the resilience of farmers and herders and to support sustainable increases in productivity.

6. *Promoting access to agricultural insurance in developing countries* begins with an articulation of the central problems that this strategy seeks to address. This is followed by the operational strategy, the vision, mission, and solution pillars, followed by a discussion of some of the key considerations for implementation.

SIX PROBLEMS TO SOLVE

7. **Problem One: Lack of clarity over the respective roles of the public and private sector in promoting agricultural insurance.** Experience tends to suggest that implementation of agricultural insurance is most efficient and effectively managed by the private commercial agricultural sector, but that successfully scaled up agricultural insurance programs typically require leadership and targeted support from government. Examples include the weather and area yield based crop insurance programs in India, the weather based crop insurance scheme in Mexico, and the index-based livestock insurance in Mongolia. For the private sector to be able to innovate and invest in the interests of farmers and herders, there must be clarity over the respective roles of the public and private sector.

8. **Problem Two: Lack of coordinated investments in public goods.** In developing countries many aspects of agricultural insurance require coordinated, not competitive, investments. For example, it

typically does not make sense for each insurance provider to install their own weather stations or conduct their own yield measurements, but rather for there to be one coordinated investment in high quality market data that is available to all insurance providers on standard terms. Other areas where coordinated actions and investments may be more efficient than competition in some developing countries include provision of information and education about agricultural insurance, data management, actuarial risk assessment and technical pricing, and risk financing.

9. **Problem Three: Governments often lack the institutions required to effectively use agricultural insurance markets to meet social objectives.** Some government objectives, for example protecting the most vulnerable farmers and herders, building resilient rural credit markets, or achieving agricultural productivity increases, may not be achievable without government support, but may be cost-effectively achieved with targeted financial support from government to agricultural insurance markets. Precisely how support is targeted is important; although most agriculture insurance markets in developed economies receive significant premium subsidies, this is not always best practice. Public sector support can undermine, rather than enhance, agricultural insurance markets if it is not well targeted, or does not have a suitable exit strategy. Effective targeting requires government to have both specialist in-house technical expertise (including actuarial expertise), and the institutions necessary to use that technical expertise to inform policy.

10. **Problem Four: Insurance providers and governments often lack technical capacity.** Actuarial expertise, necessary for product design and evaluation, risk-based pricing, and cost-effective risk financing, is often scarce in developing countries. Without actuarial product design and evaluation, it is not possible to ensure that insurance products are safe for consumers; without risk-based pricing, agricultural insurance can create moral hazard, support inefficient agricultural production decisions, distort market incentives, and provide financial disincentives for climate change mitigation activities; and without cost-effective risk financing, premium rates may be unnecessarily high. Actuarial analysis can help provide governments and insurance providers with the information they need to make informed decisions about which types of data to invest in, how to implement sustainable risk financing solutions, how to set premiums, and how to target and when to phase out public support.

11. **Problem Five: Many of the products offered through recent pilots have been technically feasible from the insurance provider's perspective, but have often offered limited client value and/or are not affordable**. Of particular importance are the premium loading (i.e. the extent to which the premium exceeds the expected claim payment) and basis risk (the risk that the claim payment will not fully reflect the loss incurred by the policyholder). Statistical analysis of some recent weather index insurance pilots suggests that the combination of premium loading and basis risk for weather index insurance may lead to poor value for clients. This suggests that further innovation in designing and implementing indices that reliably capture the worst years may be needed.

12. **Problem Six: Tools and indicators used for monitoring and evaluation are often not fit for purpose, particularly for index insurance programs.** Implementing informative monitoring and evaluation for agricultural insurance is challenging, but essential. Due to the low frequency nature of covariate shocks, many approaches to evaluation, such as randomised control trials, cannot offer answers to many of the most important questions. However, other approaches, such as those that incorporate statistical analysis of basis risk for index insurance products, are technically feasible and

can be extremely useful in understanding the *expected* welfare impact of a product or program and guiding public support.

OPERATIONAL STRATEGY 2013-2015

VISION

13. A world where agricultural risk does not hinder investments in productivity, and where rural households are financially resilient to agricultural shocks.

MISSION

14. The mission of the AIDP is to support countries in implementing sustainable, cost-effective public private partnerships in agricultural insurance that increase the financial resilience of rural households, as part of their broader agricultural risk management strategy.

SOLUTION PILLARS

15. **AIDP was founded on the belief that sustainable, scaled up agricultural insurance programs that benefit vulnerable farmers and herders require engagement, innovation and action from both the public and the private sector.** The following six solution pillars of action reflect this belief and provide an operational framework that is both programmatic and demand-driven. Solution pillars one and five will be led by partners within the overall AIDP framework, and with input from the DRFI Program as necessary.

SOLUTION PILLAR ONE: AGRICULTURAL RISK ASSESSMENT

Outcome: More systematic use of risk information in agricultural risk management

16. **The AIDP supports the development of agricultural insurance public policy, as part of each client government's overall agricultural risk management strategy.** Experience shows that successful scaling up agricultural insurance pilots relies very often on a close partnership between the private sector and the public sector. In particular, governments should integrate agricultural insurance in their overall agricultural development policy. IBRD has a clear comparative advantage in this dialogue with Ministries of Finance and Agriculture.

17. **AIDP will work with governments and partners to identify, quantify and assess the budgetary impacts of agricultural sector risks.** Sustainable and cost-effective agricultural insurance solutions rely heavily on a sound and detailed agricultural sector risk review. These reviews will be led by the ARMT, drawing on their expertise and extensive experience in this area, with input from the DRFI Program on actuarial aspects of potential insurance solutions. An outcome of this review process will be the development of an agriculture risk management framework, to be used for planning and

investment purposes to reduce sectoral volatilities and improve sustainability. Such risk information can be used to better understand which insurance solutions would be most valuable, with reference to government policy objectives.

Headline activities		
Institutional capacity building and policy dialogue	Advisory services	Knowledge management
• Agriculture risk management framework	• Ongoing dialogue on agricultural risk management	• Contribution to existing platforms (e.g., FARM-D)

SOLUTION PILLAR TWO: PUBLIC SECTOR INSTITUTIONAL CAPACITY BUILDING

Outcome: A risk market infrastructure with clearly defined roles that efficiently crowds in the private sector.

18. **AIDP will work with client countries to identify and clarify the respective roles of the public and private sectors.** The roles of government and the private sector can vary from country to country, as premium volumes and policy objectives differ. In low and middle income countries, the government is likely to have a central role in developing the required infrastructure for agriculture insurance. Drawing on experience, AIDP recognises that such countries usually require, at least initially, a high level of involvement from the public sector.

19. **Premium subsidies for agricultural insurance are widely used by governments, but need to be carefully designed as part of a comprehensive public support.** AIDP will work with client countries to identify, analyse, and assess the costs and benefits of strategies to support the take up of insurance protection through targeted, fiscally sustainable interventions. Government may also have roles to play in supporting a minimum market size and a desired level of protection for vulnerable farmers and herders. In some countries a combination of insurance premium subsidies and compulsion may lead to a minimum sustainable market size and a desired level of protection for vulnerable farmers and herders, at least in the initial stages of a program. In other countries government support is largely through public investments in insurable data, available for insurers to use. Governments are also likely to play other critical roles, such as in consumer protection (which can be complex, particularly for indexed insurance products), in providing an enabling legal and regulatory framework, and in the integration of insurance principles into the delivery and financing of social safety net programs.

20. **Through a two-way dialogue with client countries, AIDP will build public sector institutional capacity in how insurance principles and tools can be used to achieve social objectives.** In many countries, public responses to agricultural sector risk are often driven by ex-post rather than ex-ante approaches. For example, in the aftermath of a large shock to agricultural production, public funds might be used to support vulnerable farmers or to bail out troubled lenders. Ex-post approaches can be slow as it can take time to reallocate public funds from other activities. They also typically offer unreliable protection to the intended beneficiaries and can adversely distort agricultural risk management decisions. A move to an ex ante actuarial regime (where in the advance of a potential disaster, investments are made in mechanisms to support the resilience of farmers, herders and supply

chains) can lead to more timely, efficient, equitable, reliable and objective protection being available to intended beneficiaries.

Headline activities		
Institutional capacity building and policy dialogue	Advisory services	Knowledge management
• Integrated agricultural risk management framework • National strategy on agricultural insurance • Policy dialogue on risk financing under an ex ante regime • Policy dialogue on public sector institution building, such as the establishment of effective Technical Support Units	• Review of risk market infrastructure for agricultural insurance • Advise government on supporting agricultural insurance in an effective, targeted and fiscally sustainable way	• Policy notes • Peer learning exchange

SOLUTION PILLAR THREE: DATA MARKET INFRASTRUCTURE

Outcome: High quality data that can be used by government and insurance providers for decision making, and as the foundation for reliable financial protection

21. **Coordinated investments in collecting, auditing and managing insurance-quality data are an essential foundation for affordable, reliable protection against large agricultural shocks.** The AIDP supports all types of agricultural insurance products, including traditional indemnity insurance solutions. However, for index insurance in particular, high quality data can be costly relative to potential premium volume. An efficient solution can involve collecting one set of audited, insurable data, which can be used by government and by all market participants.

22. **It may be appropriate for a regulated organisation to collect the market data, audited by insurance providers and government.** For insurance to be available at an attractive price, the set of market data would need to have a sufficiently strong audit mechanism such that it is trusted by government, local insurance providers, and international reinsurers. A private sector firm or public institution may require government assistance for some kinds of index (such as sample-based yield indices) to obtain the relevant data. Given appropriate incentives, and through coordinated financing, research institutions and the private sector may be able to lead innovations in index design.

23. **For the case of index insurance, government policy objectives may be better met with a higher quality set of indices that reliably capture large local shocks.** Evidence suggests that expensive, but reliable protection will benefit poor farmers or herders better than less expensive, but unreliable

protection[2]. Investments in high quality indices are essential to protect farmers and herders. Products that utilised both weather and yield data, for example, are more expensive than products that relied only on weather data, but offered much more reliable protection to farmers against the sorts of catastrophic, covariate shocks that can devastate whole communities (see Box 1). Ultimately it may be appropriate for users of the indices to pay all costs associated with them, but at least in the early years government may want to finance or co-finance innovative, high quality indices.

BOX 1: INNOVATIVE USE OF TECHNOLOGY TO SUPPORT HIGH QUALITY INDICES IN INDIA

Innovative use of mobile technology can lead to a step change improvement in the speed, reliability and cost of crop cutting experiments underlying area yield indices. A series of World Bank/AIC of India pilots in 2011/2012 suggest that investments in GPS enabled mobile phones with video recording capabilities, mobile phone software, database management, training of personnel, and deployment of an auditing function can lead to significantly improved data integrity and timelier claim settlement for farmers. World Bank/AIC of India are also piloting ways of using weather and satellite data to complement, rather than replace, yield data from crop cutting experiments, for example by using such data to better target crop cutting experiments, or as the basis for early part-payment claim triggers. Reinsurers have responded positively to these initiatives.

Headline activities		
Institutional capacity building and policy dialogue	Advisory services	Knowledge management
• Develop strategy for data market infrastructure	• Develop technical capacity to understand what data should be collected • Support innovations in implementing data market infrastructure strategy	• Disseminate data market infrastructure strategy to insurance providers and other government departments, to support widespread use of insurance-quality data • Develop technical material on innovations in collecting and auditing appropriate agricultural insurance data

SOLUTION PILLAR FOUR: PUBLIC SECTOR TECHNICAL CAPACITY BUILDING

Outcome: Public and private sectors have the technical capacity they need to make informed decisions and to implement actuarially sound agricultural insurance.

24. **Design, pricing, risk financing, and program monitoring and evaluation all require specialist actuarial expertise.** Specialist actuarial expertise is critical for the successful implementation of an agricultural insurance program. It is required for performing essential tasks such as designing evidence-based, cost effective insurance products offering reliable protection, implementing risk based

[2] Recent World Bank research found that across one Indian state the correlation between weather indexed claim payments and farmer yield losses was only 14% (Clarke et al. 2012).

pricing, and designing cost effective risk financing solutions for agricultural risk. For example, actuarial analysis of historical trends (and potential effects of climate change) is highly technical, but critical for risk-based pricing calculations.

25. **Actuarial and other technical expertise could be provided centrally through a Technical Support Unit.** Actuarial and other specialist expertise can be expensive. An international model used successfully to manage this cost is to house such expertise centrally, for example within a Technical Support Unit. Technical Support Units (TSUs) are typically present in countries in which there is some degree of competition between private insurance providers.[3] Examples of functions executed by TSUs are (i) data and information collection and management; (ii) insurance demand assessment; (iii) product design and rating, including basis risk analysis; (iv) design of operating systems and procedures; (v) training for stakeholders; (vii) awareness campaigns and; (viii) analysis of any public subsidies.

26. **An appropriate legal and regulatory framework for agricultural insurance includes both an insurance regulatory and supervision function and appropriate banking capital adequacy regulation.** In many developing countries, banks and MFIs are either unable to expand agricultural credit due to regulatory restrictions on balance sheet risk, or are able to expand agricultural credit with inadequate management of the balance sheet risk. Capital adequacy regulation can crowd in responsible agricultural credit by rewarding banks and MFIs that have adequate insurance for agricultural shocks. In addition to typical requirements for all insurance business, indexed insurance poses specific regulatory challenges, particularly in terms of consumer protection for what are (at least in economic terms) derivatives.

Headline activities		
Institutional capacity building and policy dialogue	Advisory services	Knowledge management
• Policy dialogue on actuarial functions necessary to support the risk market infrastructure	• Technical capacity building, for example of Technical Support Units • Index/indemnity insurance product development • Risk-based pricing • Underwriting • Insurance regulation and supervision	• Develop actuarial training modules for design, pricing, and risk financing for agricultural insurance • Disseminating Technical Support Unit best practices • Technical and operational manuals

SOLUTION PILLAR FIVE: PARTNERSHIP WITH PRIVATE SECTOR

Outcome: Leveraging the private sector for efficient design and implementation of risk transfer solutions

27. **The AIDP will facilitate dialogue between the public and private sector during the preparation phase of public private partnerships in agriculture insurance, whilst the market architecture is**

[3] Countries with TSUs include Italy, France, Spain, Mexico, Chile, Brazil, Russia, Poland and Ghana.

under development. Private sector entities with expertise in data collection and management, distribution, marketing, pricing, product design and risk financing can offer valuable insights during the preparation phase of agriculture insurance schemes. An open dialogue with such partners can reduce the risk of implementation bottlenecks at the implementation stage.

28. **The AIDP supports collaboration between the public and private sectors on the implementation of agriculture insurance programs, and will work closely with partners to achieve this collaboration.** Using the private sector to implement agricultural insurance can have numerous benefits. The private sector is well placed to push the innovation frontier when implementing risk-based pricing, efficient delivery, distribution, claims settlement, and objective and transparent data collection. The large investments required to achieve these private sector benefits cwill be coordinated with IFC-led GIIF, utilizing their expertise in private sector engagement. Through linkages between AIDP and the IFC, the World Bank group has the platform to act as a facilitator between the private sector and government to ensure that private sector resources and know how are leveraged to achieve government objectives.

Headline activities		
Institutional capacity building and policy dialogue	Advisory services	Knowledge management
• Policy dialogue on leveraging the private sector to achieve government objectives • Policy dialogue on aligning private sector incentives with governments	• Advise government on leveraging the private sector • Analyse insurance products in terms of feasibility, suitability, scalability and affordability	• Knowledge products on PPPs in agriculture insurance

SOLUTION PILLAR SIX: MONITORING AND EVALUATION

Outcome: An implementable monitoring and evaluation framework which provides meaningful information about the welfare impact of programs

29. **To facilitate the gathering of evidence of impact, AIDP will develop and implement a monitoring and evaluation framework to assess the welfare impact of agricultural insurance programs.** Using randomised control trials to evaluate the impact of risk transfer instruments for low frequency covariate shocks has severe limitations. Thus the framework will take a *structural approach.* It will link to work to be conducted by the World Bank DRFI Program on monitoring and evaluation for sovereign risk transfer solutions and draw lessons from ongoing initiatives. It will also incorporate basis risk analysis, as this is a feature of paramount importance for indexed agricultural insurance products. This framework will form the basis of reporting to AIDP stakeholders. AIDP will work with research partners, including the World Bank's Development Economics Vice-Presidency (DEC)[4] and other

[4] DEC is leading the World Development Report 2014, which will focus on risk, uncertainty and crisis

academic institutions, to continue to develop operationally feasible approaches to meaningfully evaluate the impact of agricultural insurance.

Headline activities		
Institutional capacity building and policy dialogue	Advisory services	Knowledge management
• Disseminate evidence to policymakers on the relative benefits of ex ante approaches to agricultural risk management, including agricultural insurance	• Build capacity so that elements of evaluation framework can be used to inform product design decisions	• Develop and implement practical methodology for monitoring and evaluation of agricultural insurance

IMPLEMENTING THE STRATEGY

OUTREACH AND PARTNERSHIP DEVELOPMENT

30. **The successful implementation of this strategy will depend on AIDP's capacity to support and empower developing country governments.** Ultimately any public private partnership will be owned and implemented by client governments and the local private sector insurance providers, and will need to be both political and technical sustainable.

31. **Within this context the five comparative advantages of the World Bank are clear:**

i. **Convening power.** The World Bank Group has the platform to act as a neutral facilitator between the public and private sectors within developing countries.

ii. **Partnership with other ongoing programs**. The AIDP strategy provides a blueprint for constructive, sustainable private sector engagement in agricultural insurance through public private partnerships, complementing other World Bank Group programs such as the GIIF.

iii. **Technical experts to inform private and public sector decision makers.** The DRFI Program's experience working with programs in India and Mongolia that have now scaled up has led to specialist in-house expertise within the AIDP team.

iv. **Link to overall agricultural risk management and policy dialogue.** AIDP's position within the World Bank as a collaboration between the DRFI Program and ARMT gives it a clear comparative advantage in this dialogue with Ministries of Finance and Agriculture.

v. **Potential to leverage with ongoing projects for scaling up and financing.** Scaling up agricultural insurance programs usually requires investments that can only be covered through

lending operations (see, for example, Mongolia or India). AIDP is closely working with our regional colleagues to ensure such leverage.

32. **AIDP will share experiences with the numerous international networks/platforms on agricultural insurance, and will partner with non-World Bank networks on a country by country basis.** For example, AIDP expects to engage with research networks and organisations in developing a monitoring and evaluation framework for agricultural insurance.

OPERATING PRINCIPLES

33. **AIDP will deepen engagement in priority countries.** AIDP will allocate a majority of funds to low-income, high risk countries. The list of priority countries is subject to review, which will be guided by internal and external factors including internal progress reviews, political factors and the external donor environment. Currently the list of priority countries includes Bangladesh, Senegal, Kenya, Benin and Indonesia (to be confirmed). In particular, the list of priority countries may be expanded based on (i) demand from governments committed to explore the use of private public partnerships for agricultural insurance; and on (ii) additional funding from bilateral or multilateral donors. In those priority countries, AIDP will heavily invest in capacity building both through policy dialogue and targeted technical assistance. AIDP also expects to provide targeted technical assistance to ongoing agricultural insurance projects in India and Mongolia, as lessons learned from these (very few) large scale programs can be applied in priority countries.

34. **A series of six principles will guide the implementation of the strategy during the period 2013-15**:

    a. **Demand driven:** AIDP was founded on the belief that sustainable, scaled up agricultural insurance programs require strong leadership from the public sector. AIDP will therefore prioritize work with client governments that wish to explore the use of public private partnerships in agricultural insurance to achieve policy objectives.

    b. **Leveraging and transformative.** AIDP will prioritize activities which present an opportunity for leveraging additional financing from the World Bank and others, and will seek to support project preparation for larger agricultural insurance investments.

    c. **Evidence-based.** Although developing a sustainable public private partnership for agricultural insurance can take some time, as demonstrated by the long term nature of engagements by the World Bank on agricultural insurance in Mongolia and India, the monitoring and evaluation framework, to be developed in the first phase of AIDP, will guide the work of AIDP. Moreover, AIDP will implement a communications strategy to communicate results and impact while demonstrating how AIDP is creating high value for its partners, donor governments and, most importantly, the vulnerable farmers and herders whose lives will be improved as a result of AIDP support.

d. **Pro-poor**. The primary focus of AIDP will be to support governments in using public private partnerships in agricultural insurance to achieve social objectives.

e. **Sustainable scaling up.** Initial phases of a program provide an opportunity to learn about how to achieve high and sustainable penetration at the national level. As such, these phases will be used to clarify public and private sector responsibilities and to target high insurance penetration within selected districts, rather than low penetration spread across a large area.

f. **Climate-smart**. Any agricultural insurance solution should support, not inhibit risk mitigation and adaption to climate change. Central to any agricultural insurance program that seeks to achieve this is actuarial risk-based pricing, where farmers and herders pay premiums that relate to the risk faced.

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